VOLUME 4: APPENDIX V1-4.1: PUBLIC CONSULTATION REPORT

VOLUME 4: APPENDIX V1-4.1: PUBLIC CONSULTATION REPORT

Annexes

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1. PUBLIC CONSULTATION REPORT

1.1 Purpose of Document

1.1.1 This document provides a summary of the public consultation undertaken by SSEN Transmission in relation to the proposed Strathy South Wind Farm Grid Connection (the Proposed Development). The Proposed Development comprises a Proposed Alignment and an Alternative Alignment (as described in **Volume 5** of this EIA Report).

1.1.2 The decision taken by the Applicant to include both options within the consent application has been made given the route of the Proposed Alignment passes through the footprint of the proposed Melvich Wind Energy Hub. The minimum distance required between the proposed wind turbines and an OHL capable of operating at 275 kV could not be maintained along the route of the Proposed Alignment and therefore, should Melvich Wind Energy Hub be granted consent, an alternative OHL alignment would need to be considered.

- The Proposed Alignment would consist of approximately 10.5 km of 132 kV double circuit OHL supported by steel lattice towers from Strathy North 'T' (near Dallangwell) to a new cable sealing end (CSE) compound, prior to connecting into Connagill 275/132 kV substation via two short sections of single circuit 132 kV UGC. To allow for futureproofing, it is proposed that a section of the Proposed Alignment would be capable of operating at 275 kV in the future, if required.
- The Alternative Alignment would be consistent with the Proposed Alignment between Towers 19[1] to 31. From Tower 31, the Alternative Alignment would deviate away from the Proposed Alignment for approximately 8 km to circumnavigate the proposed turbines of the Melvich Wind Energy Hub, rejoining the Proposed Alignment to the north of the Achridigill Burn. Thereafter, the two alignments would overlap (between Towers 47 to 64) to the proposed new CSE compound, connect into Connagill 275/132 kV substation via 132 kV UGC. The total length of the Alternative Alignment would be approximately 13.5 km.

1.1.3 Consultation for the Proposed Development (both proposed and alternative options) was undertaken in conjunction with other transmission infrastructure projects in the vicinity required to connect consented and/or proposed wind farms to the electricity transmission network. Together these projects are referred to as the Connagill Cluster Grid Connections. This approach was taken to streamline the consultation process and allow stakeholders the opportunity to consider the proposals to consolidate infrastructure and construction practices where practicable.

1.1.4 There is no statutory requirement to undertake formal consultation for applications made under section 37 of the Electricity Act 1989. However, SSEN Transmission has sought to maintain an open dialogue with local communities in the vicinity of the Proposed Development throughout the evolution of the project. This has included carrying consultation events during the routeing and alignment selection stages. These were planned to engage with any local elected members such as Ward Councillors and Community Councils, landowners, residents, community groups and businesses that may be affected. SSEN Transmission held parallel communication with key statutory consultees to understand their views on the proposals at the route and alignment selection stages, which has led to key areas of design evolution and development.

1.1.5 The main body of this Public Consultation Report is supported by a series of annexes.

1.2 SSEN Transmission Route and Alignment Selection Process

1.2.1 The approach to the route selection of the Proposed Development was informed by SSEN Transmission's guidance 'Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above' (September 2020). The guidance sets out SSEN Transmission's approach to selecting a route for an OHL or underground cable. This document helps SSEN

[1] Both the Proposed Alignment and Alternative Alignment commence at Tower 19

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.

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

1.2.3 The guidance splits 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.

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

1.3 Route Stage: Consultation

1.3.1 In March 2022 a virtual public consultation was carried out[2], with route options for the Proposed Development presented to members of the public, along with information on other separate wind farm grid connections that were being progressed at the time by the Applicant.

1.3.2 Upon consideration of a rationalised approach for the Connagill Cluster Grid Connections, including the Proposed Development, a further in-person public consultation event took place on **30th November 2023, 3-7pm at Strathy Village Hall**, to present the appraisal of the rationalised route options proposed for the various grid connections (see **Plate 1a** in relation to the route options considered for the Proposed Alignment and **Plate 1b** in relation to the Alternative Alignment). Visitors were able to engage directly with the project team where they could ask any questions they might have about the project and share their feedback on the current proposals.

1.3.3 Community Councils and councillors were made aware of the consultation event via email (see **Annex A**) and a mail drop was also carried out to approximately 500 households in the local area ahead of the route stage consultation event (see **Annex B**). The consultation event was also advertised on SSEN Transmission's social media channels and the dedicated project website (see **Annex C)**.

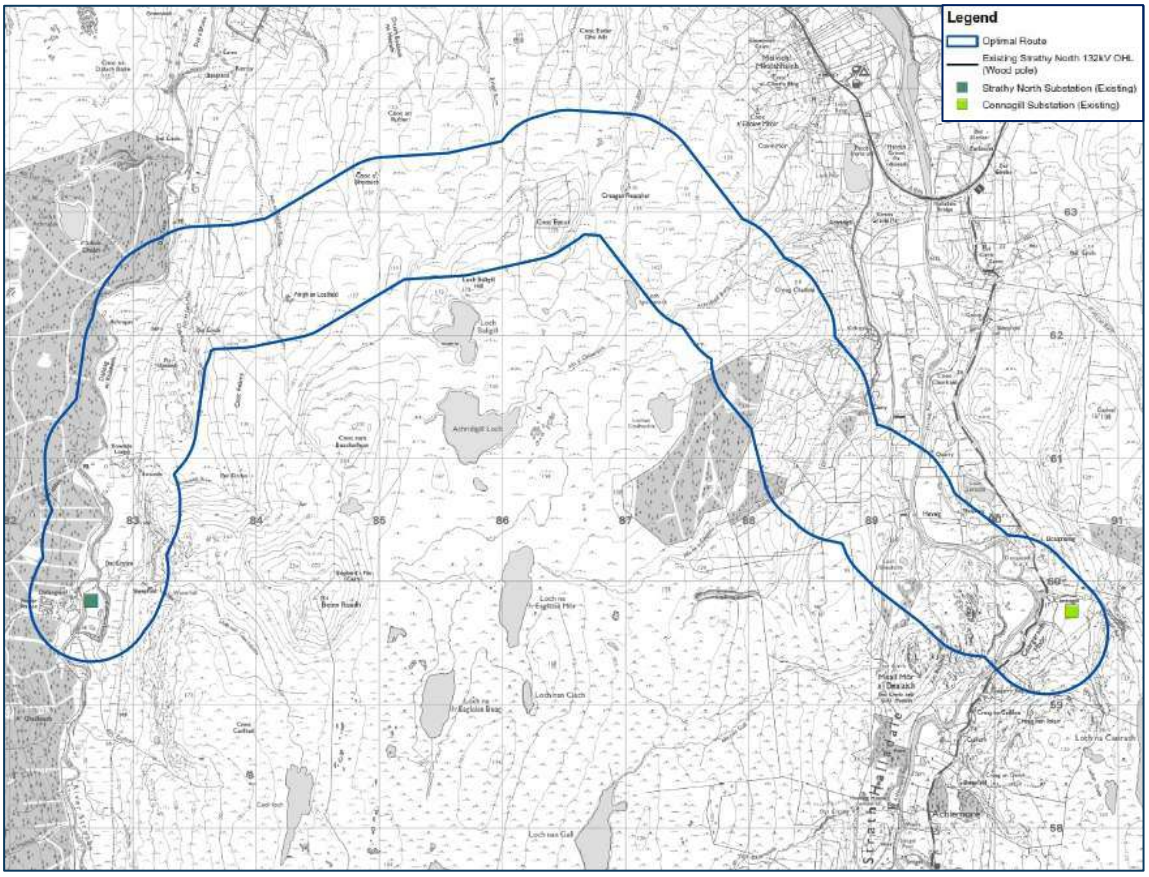
1.3.4 A copy of the Route Stage consultation booklet was made available for attendees to take away from the event (see **Annex D)**. This included a copy of the exhibition boards that were on display at the event. Exhibition materials were also available for download via the dedicated project website: https://www.ssen-transmission.co.uk/projects/project-map/Connagill-Cluster.

1.3.5 A total of 17 visitors attended the consultation event. A feedback form was distributed to visitors at the event to provide comments, and feedback was requested to be returned to SSEN Transmission by 12th January 2024.

[2] Virtual consultation was carried out in accordance with Scottish Government's Guidance on pre-application consultation for major planning applications during the Covid-19 emergency period.

1.3.6 The consultation event was followed by the issue of the Connagill Cluster Grid Connections Consultation Document (Routeing Stage)[3] (hereafter referred to as "Routeing Stage Consultation Document"), published in December 2023. The Routeing 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 Consultation Document sought comments from stakeholders on the route option studies undertaken, and the rationale for, and approach to, the selection of the Optimal Route[4]. A copy of the Routeing Stage Consultation Document was made available for download via the dedicated project website from 12th December 2023.

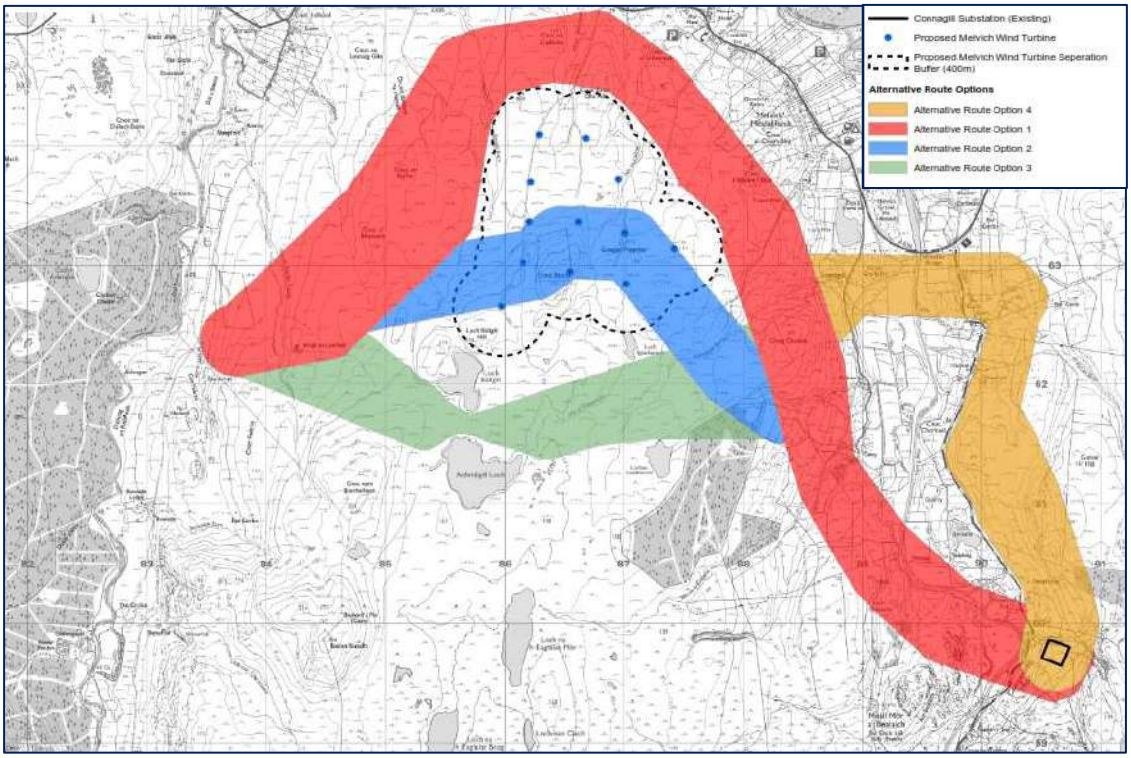
Plate 1a: Proposed Route Options



[3] Connagill Cluster Grid Connections Consultation Document (Route Stage) (December 2023), produced by SSEN Transmission. Available at https://www.ssen-transmission.co.uk/globalassets/projects/connagill-cluster-documents/connagill-cluster-grid-connections---routeing-consultation-document.pdf

[4] A route to be taken forward to stakeholder consultation following a comparative appraisal of route options.

Plate 1b: Alternative Route Options



1.4 Route Stage: Consultation Responses and the Applicant's Response

1.4.1 Comments received from stakeholders and members of the public in response to the Consultation Document or following the consultation event, were documented in the Connagill Cluster Grid Connections Report on Consultation (Routeing Stage)[5], published in April 2024. The Report on Consultation also outlined the Applicant's responses provided at route stage consultation, along with confirmation of the action to be taken, where relevant.

1.4.2 A summary of the feedback received from statutory and non-statutory consultees following the consultation period (November 2023 to February 2024) is set out in **Annex H**.

Proposed Route Options

1.4.3 NatureScot provided development advice on protected areas, specifically the Caithness and Sutherland Peatlands Special Area of Conservation (SAC) and Special Protection Area (SPA), and the [at the time] proposed Flow Country World Heritage Site (WHS). They set out the information needed to be supplied in an application for consent to allow them to be able to comment on the proposals with regards to National Planning Framework 4 (NPF4) and their remit for protected areas. NatureScot also suggested that the Applicant consult with the developers of the proposed and consented wind farms, which are to be connected by the project, for information with respect to SPA species distribution and movement. RSPB Scotland welcomed that the optimal route appeared to largely avoid natural heritage designated sites in the area, however noted that the Flow Country WHS could not be avoided. The Highland Council (THC) had no further comments from those that they raised previously in their pre-application response (see **Volume 4: Appendix V1-4.5: The Highland Council Pre-Application Advice for Major Developments – September 2023**).

[5] Connagill Cluster Grid Connections: Report on Consultation (Route Stage) (April 2024), produced by SSEN Transmission. Available at: https://www.ssen-transmission.co.uk/globalassets/projects/connagill-cluster-documents/2024-consultation-documents/report-on-consultation-routeing-stage---connagill-cluster---april-2024.pdf

Alternative Route Options

1.4.4 Responses received from statutory and non-statutory consultees provided general support for the Optimal Alternative Route included within the Routeing Stage Consultation Document. THC suggested considering an iteration of the Optimal Alternative Route utilising UGC in the northern part of the route, where it runs closest to the A836 and settlements. Within the Report on Consultation[5], the Applicant acknowledged that the use of UGC is considered to mitigate likely significant effects where appropriate but noted that an UGC does not come without its own constraints, including additional land take and the potential for environmental effects particularly on habitats and hydrology; the requirement for additional infrastructure (in the form of cable sealing end compounds and joint bays); and challenges in maintenance and power restoration. Given these constraints and SSEN Transmission's responsibility for an economical and efficient transmission network, it was noted that OHL is considered the most appropriate choice of technology for this connection. Nevertheless, further environmental and engineering studies would be undertaken at alignment selection stage to seek to find an acceptable alignment, and to consider whether further mitigation is required to minimise potential effects.

1.4.5 RSPB Scotland raised concerns that all alternative route options span an important area used by qualifying species of the Caithness and Sutherland Peatlands SPA (located to the south) to access feeding at sea (to the north). Where high risks of collision are predicted, RSPB Scotland suggested that the use of UGC should be considered to reduce impacts. The Applicant noted that ornithological surveys completed across the cluster, along with data collected from surveys for other developments in the area, would be drawn upon to inform the alignment selection and to minimise this risk, where possible.

1.4.6 Historic Environment Scotland (HES) noted that the Optimal Alternative Route has the potential to impact the east-west axial view from the Bighouse garden pavilion and walled garden, a Category A Listed Building (LB7160). There may also be potential for cumulative impacts alongside the proposed Melvich Wind Energy Hub which should be taken into consideration. The Applicant noted that the potential setting impacts on historic designated sites would continue to be reviewed as the project progresses through the alignment selection and EIA stages of the project. HES requested that a photomontage showing the view from the garden pavilion looking west along the axial view towards the Alternative Route be prepared to assist with the understanding of potential impacts on the setting of the buildings, and should include the proposed Melvich Wind Energy Hub to demonstrate potential cumulative impacts. The Applicant agreed that following alignment selection stage, should this historic designated site be considered likely to be impacted by the Alternative OHL, further discussion would take place with HES regarding the requirement for a visualisation from this site.

1.4.7 A total of five feedback forms were received by SSEN Transmission during or following the November 2023 consultation event from the local community and general public. **Annex I** sets out a summary of the feedback received, although no specific comments were received stating a preference of route options, although one comment queried the need for the alternative connection should Melvich wind farm not be granted planning consent.

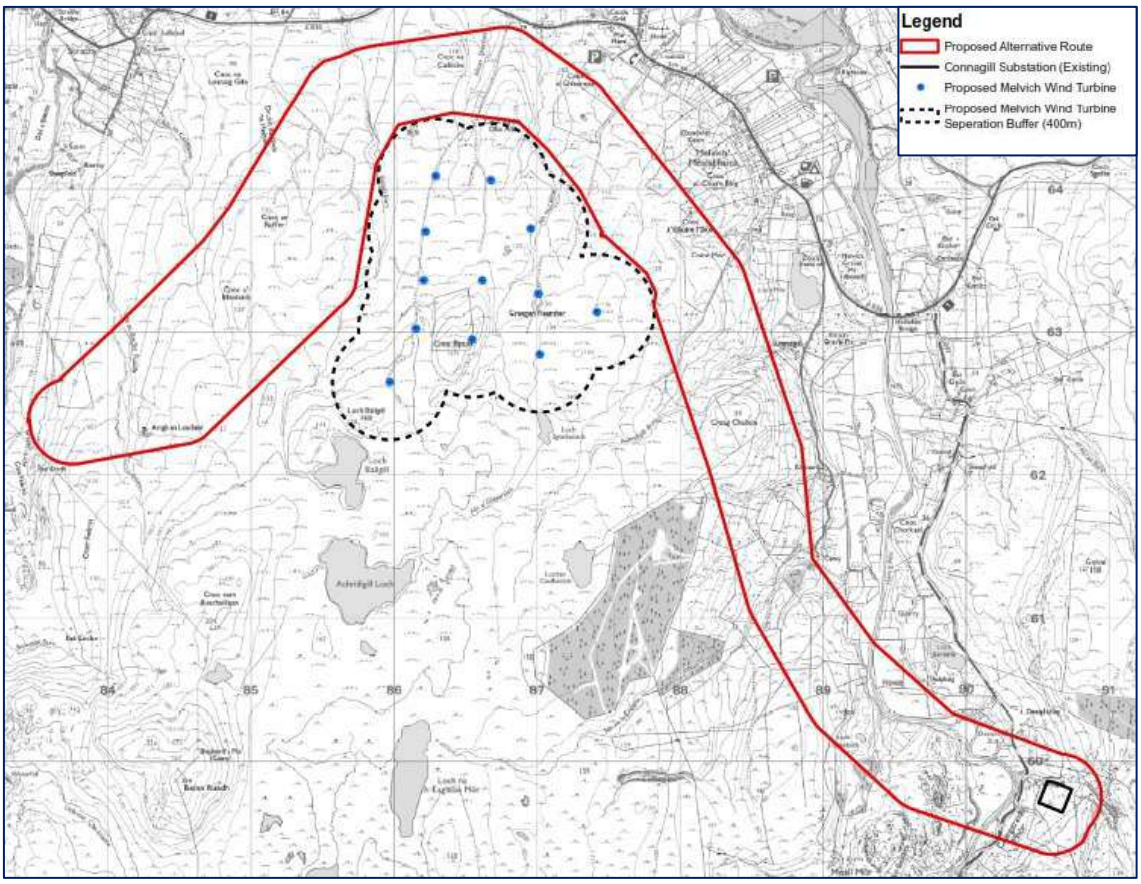
1.4.8 The reporting on the consultation process concluded with the confirmation that the Optimal Route and Optimal Alternative Route, identified within the Routeing Stage Consultation Document[3], would be taken forward to the alignment selection stage as the Proposed Route[6] and Proposed Alternative Route.

- The route option put forward as the Proposed Route is therefore as per the 2014 section 37 consent for Strathy South Grid Connection (which has now lapsed) which runs parallel to the existing Strathy North 132 kV wood pole OHL**,** which would comprise 132 kV double circuit OHL supported by steel lattice towers between Strathy 'T' (near Dallangwell) and Connagill 275/132 kV substation (as shown on **Plate 1a**).
- The route option put forward as the Proposed Alternative Route is therefore **Route Option SN-C ALT1** comprising a 132 kV double circuit OHL supported by steel lattice tower (and capable of operating at 275 kV in the future, if required) (see **Plate 2**).

[6] 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

1.4.9 All comments at route stage were taken forward into the alignment stage. This process remained inclusive, seeking further consultation where appropriate.

Plate 2: Proposed Alternative Route



1.5 Alignment Stage: Consultation

1.5.1 The appraisal of alignment options for the various cluster of rationalised wind farm grid connections (including the Proposed Development) was set out in the Connagill Cluster Consultation Document (Alignment Stage)[7] (hereafter referred to as "Alignment Stage Consultation Document") published in May 2024. The Alignment Stage Consultation Document provided a summary of the alignment selection process that had been undertaken and a description of the alignment options appraised (see **Plate 3a** in relation to the alignment options and **Plate 3b** in relation to the alternative alignment options considered for the Proposed Development). A copy of the Alignment Stage Consultation Document was made available for download via the dedicated project website: https://www.ssen-transmission.co.uk/projects/project-map/Connagill-Cluster.

1.5.2 The alignment options were also presented at a public consultation event on **20th May 2024, 3-7pm at Strathy Village Hall**. Community Councils and councillors were once again made aware of the consultation event via email and a mail drop was also carried out to approximately 500 households in the local area informing them of the event (see **Annex E**). The consultation event was advertised on SSEN Transmission's social media channels and the dedicated project website (see **Annex F)**.

1.5.3 A copy of the Alignment Stage Consultation Booklet was made available for attendees to take away from the event (see **Annex G)** which included a copy of the exhibition boards that were on display at the event.

[7] Connagill Cluster Grid Connections: Consultation Document (Alignment Stage) (May 2024), produced by SSEN Transmission. Available at: https://www.ssen-transmission.co.uk/globalassets/projects/connagill-cluster-documents/2024-consultation-documents/conngaill-cluster-grid-connections---alignment.pdf

1.5.4 A total of 14 visitors attended the consultation event. A feedback form was distributed to visitors at the event to provide comments, and feedback was requested to be returned to SSEN Transmission by 21st June 2024.

Plate 3a: Proposed Route and Alignment Options

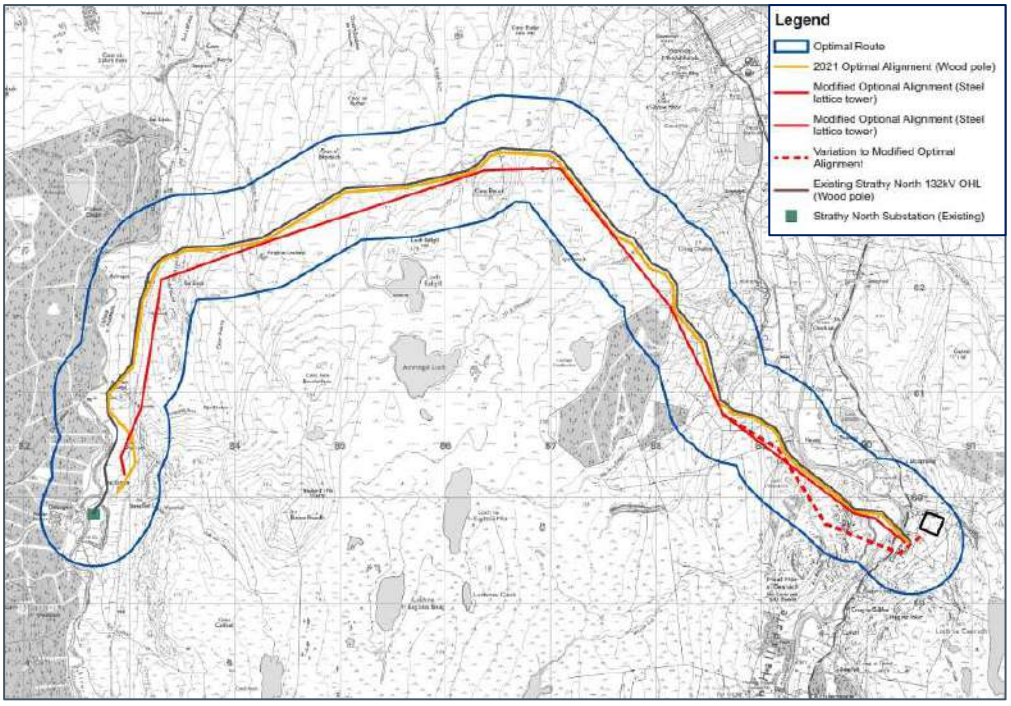
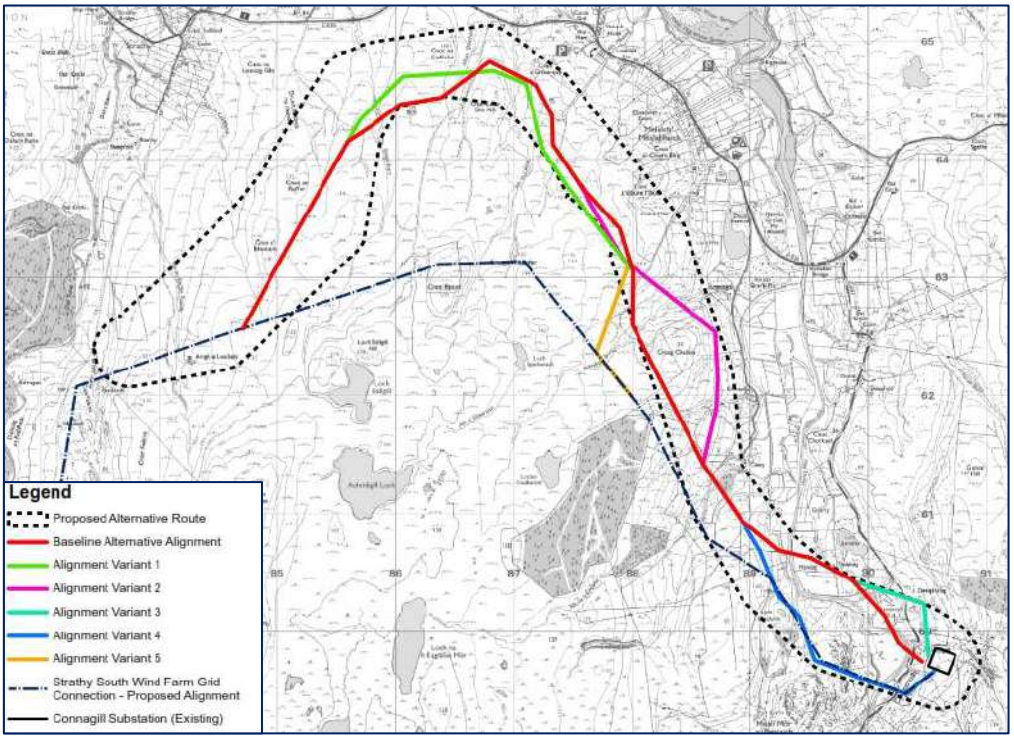


Plate 3b: Proposed Alternative Route and Alternative Alignment Options



1.6 Alignment Stage: Consultation Responses and the Applicant's Response

1.6.1 No comments were raised by stakeholders on the Optimal Alignment presented in the Alignment Stage Consultation Document[7] including in relation in relation to the designated natural heritage sites, or the Flow Country WHS.

1.6.2 In relation to the Alternative Optimal Alignment, HES suggested that it may have the potential to impact on the setting of the Category A listed Bighouse garden pavilion and walled garden (LB7160). As requested at routeing stage, they recommended that a photomontage be produced to demonstrate and support the assessment of impacts on the setting of this asset. The Applicant carried out further consultation with HES confirming that they would be happy to produce a visualisation for the Alternative Alignment within the EIA Report and a viewpoint location was agreed.

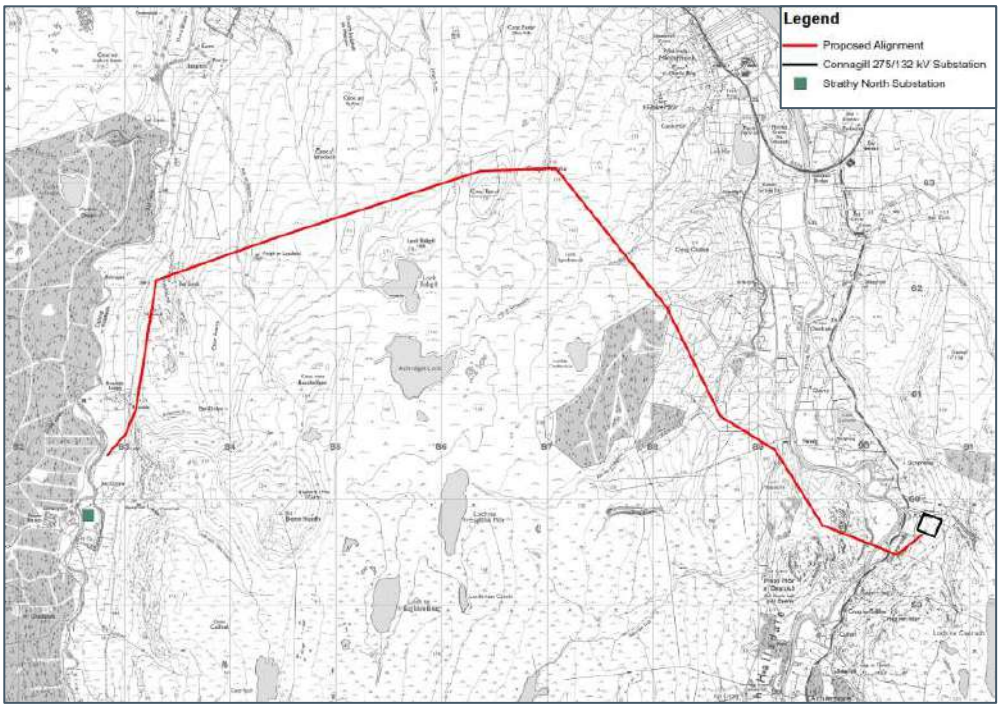
1.6.3 No comments were received from members of the public following the alignment stage consultation event.

1.6.4 As such the reporting on the consultation process, as set out in a Report on Consultation (Alignment Stage) (September 2024)[8], concluded that the Optimal Alignment and Optimal Alternative Alignment, identified within the Alignment Stage Consultation Document[7] would be taken forward to the EIA and consenting stage as the Proposed Alignment and Proposed Alternative Alignment.

- The alignment option put forward as the Proposed Alignment is as per the 2014 section 37 consent for the Strathy South Grid Connection (which has now lapsed) which runs parallel to the existing Strathy North 132 kV wood pole OHL, with some modifications, including capturing the alignment of the 'Alternative Alignment 4' on approach into Connagill 275/132 kV substation. This would comprise a 132 kV double circuit OHL supported by steel lattice towers (and capable of operating at 275 kV in the future, if required) (see **Plate 3a**).
- The alignment option put forward as the Proposed Alternative Alignment is therefore a combination of the **Baseline Alternative Alignment – Alternative Alignment Variant 1 – Alternative Alignment Variant 5 (in combination with the Proposed Alignment) - Alternative Alignment Variant 4.** This would comprise a 132 kV double circuit OHL supported by steel lattice towers (and capable of operating at 275 kV in the future, if required) (see **Plate 3b**).

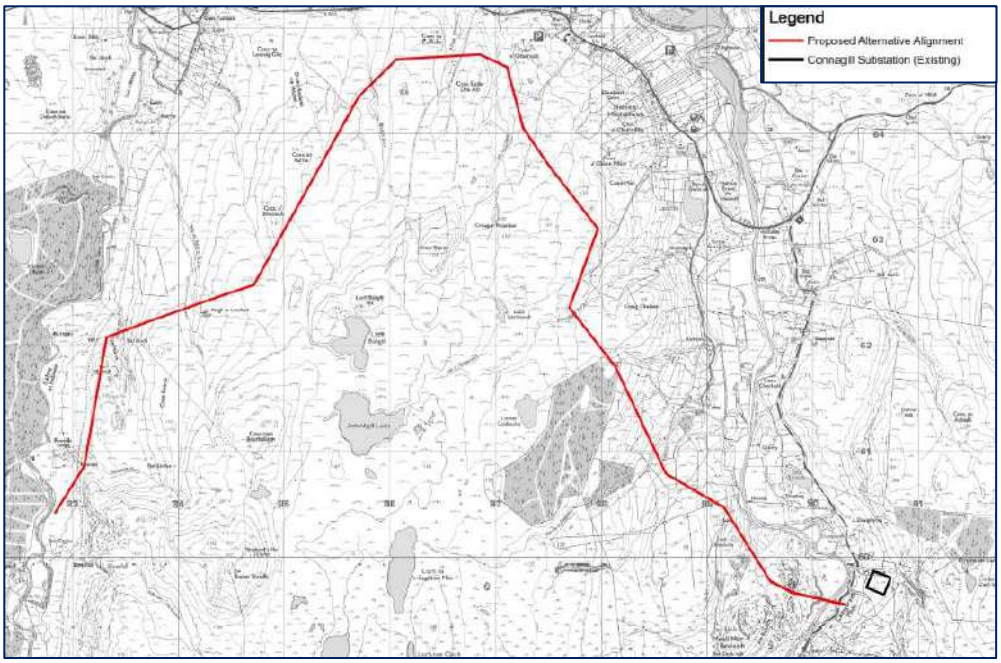
1.6.5 All comments raised through the alignment stage consultation, as well as those resulting from any further meetings and liaison with stakeholders were taken forwards to the EIA and consenting stage. The process remained inclusive, seeking further consultation where appropriate.

Plate 4a: Proposed Alignment



[8] Connagill Cluster Grid Connections: Report on Consultation (Alignment Stage) (September 2024), produced by SSEN Transmission. Available at: https://www.ssen-transmission.co.uk/globalassets/projects/connagill-cluster-documents/2024-consultation-documents/report-on-consultation-alignment-stage-september-2024.pdf

Plate 4b: Proposed Alternative Alignment



1.7 Conclusions

1.7.1 SSEN Transmission aimed to streamline consultation of the routeing process for the Connagill Cluster Grid Connections, of which the Proposed Development is part of. This was to allow stakeholders the opportunity to review the Connagill Cluster Grid Connections as a whole during the routeing stages to consider the proposals to consolidate infrastructure and construction practices where practicable.

1.7.2 SSEN Transmission reviewed and considered the responses provided by the public and other stakeholders following the route and alignment stage consultations. These responses allowed SSEN Transmission to reach a decision on the Proposed Route (and Proposed Alternative Route) and subsequent Proposed Alignment (and Proposed Alternative Alignment) to be taken forward to the EIA and consenting stage of the project.

ANNEX A – EMAIL TO COUNCILLORS – NOVEMBER 2023

From:	Marchi, Lisa
To:	Marchi, Lisa
Bcc:	patricia Groves; Michael Baird; Marianne.Hutchison.cllr@highland.gov.uk; Hugh.Morrison.cllr@highland.gov.uk; strathyarmadalecc@btinternet.com; bettyhill_strathnaver_altnaharra_cc@gaggle.email
Subject:	Connagill Cluster Wind Farm Public Consultation Event
Date:	15 November 2023 15:02:00
Attachments:	Maildrop Flyer.pdf

Good afternoon,

I am contacting you regarding an upcoming public consultation event we are holding for the Connagill Cluster Wind Farm Connection Project. The Connagill Cluster comprises the recently consented Strathy Wood (65 Megawatts (MW)) and Strathy South (208MW) wind farms and the proposed Armadale (58MW), Melvich (58 MW) and Kirkton (53 MW) wind farms

We are the licensed owner of the electricity transmission network in the north of Scotland. Operating under license means that we have certain obligations that we must fulfil. These obligations include maintaining the existing network to ensure the lights stay on and investing in the network to provide the infrastructure needed to allow generation developments to connect.

The transmission network gathers energy from power stations, hydroelectric generation schemes, and wind farms and carries it to areas of demand. We work with the Transmission System Operator, National Grid, who is responsible for operating the transmission network across Great Britain to ensure that power flows smoothly and reliably across our network.
Requests have been made to National Grid by the developers to provide a connection to the transmission network. Subject to planning consent, we are required to connect the wind farms to the transmission network. To facilitate this, we are proposing to construct a new 132kV and 275kV overhead lines. Under our Network Operators License this connection should be efficient, co-ordinated, and economic, whilst having the least possible impact on the environment.
We are holding a public consultation event **on: Thursday 30th November 3 pm-7 pm at Strathy Village Hall Strathy, KW14 7RZ**. The project team will be on hand to answer any questions and receive feedback on our proposals as we develop them further.

I have attached a poster, and if you can share it on any social media you have, it would be very much appreciated. We are keen to reach out to as many community members as possible. We have also carried out a mail drop to over 500 properties in the area.

I hope you can come to the event, and if you require further information, please do not hesitate to contact me.

Kind regards,

Lisa

Lisa Marchi
Community Liaison Manager
M: +44(0)7825 015507
E: lisa.marchi@sse.com
10 Henderson Road, Inverness IV1 1SA
www.ssen-transmission.co.uk

ANNEX B – MAIL DROP (ROUTE STAGE) – NOVEMBER 2023

Scottish & Southern Electricity Networks

TRANSMISSION

Connagill Cluster Wind Farm Connections

Public Consultation event

SSEN Transmission invites you to come and share your views with us

Scottish and Southern Electricity Networks (SSEN) Transmission are holding a consultation exhibition on our proposals to provide connections for five proposed wind farms in the Strathy area. Known as the Connagill Cluster, the connections comprise of the recently consented Strathy Wood and Strathy South wind farms, as well as the proposed Armadale, Melvich and Kirkton wind farms.

This consultation is focused on SSEN Transmissions routeing for the new grid connection which will include both wood pole and steel lattice overhead line technology. A number of potential route options are being considered, each has a variety of environmental and engineering constraints to navigate and we would welcome your feedback to help us assess each route option in more detail.

The consultation event will be taking place on:

Thursday 30th November
2pm – 7pm

Strathy Village Hall
Strathy, KW14 7RZ

If you are unable to join the event or have difficulty reviewing the project information online, please contact me. I will arrange for information to be posted to you.

If you have any questions, please do not hesitate to contact the Community Liaison Manager:

Lisa Marchi
Community Liaison Manager, 10 Henderson Road, Inverness, IV1 1SN (Return address)

lisa.marchi@sse.com
+44 (0) 7825 015 507
SSEN Community
@SSETransmission

Visit the project website by scanning the QR code, or use the following URL:

www.ssen-transmission.co.uk/projects/project-map/Connagill-Cluster/

ANNEX C – SSEN ADVERTISEMENT (ROUTE STAGE) – NOVEMBER 2023

30
NOVEMBER
2023

Time:
15:00 - 19:00

Location:
Strathy Village Hall, Strathy, Strathy, KW14 7RZ

Local authorities:
Highland

Related projects:
Connagill Cluster Wind Farm Connections

Category:
Consultation

Connagill Cluster Wind Farm Connections

Public Consultation Event

We invite you to come and share your views with us

We are holding a consultation exhibition on our proposals to provide connections for five proposed wind farms in the Strathy area. Known as the Connagill Cluster, the connections comprise the recently consented Strathy Wood and Strathy South Wind Farms, as well as the proposed Armadale, Melvich and Kirkton Wind Farms.

This consultation is focused on our routeing for the new grid connection, which will include both wood pole and steel lattice overhead line technology. A number of potential route options are being considered, each has a variety of environmental and engineering constraints to navigate and we would welcome your feedback to help us assess each route option in more detail.

If you are unable to join the event or have difficulty reviewing the project information online, please contact me. I will arrange for information to be posted to you.

Lisa Marchi
Community Liaison Manager

Email: lisa.marchi@sse.com
Telephone: 07825 015509
Address: 10 Henderson Road, Inverness, IV1 1SN

ANNEX D – ROUTEING STAGE CONSULTATION BOOKLET – NOVEMBER 2023

Connagill Cluster Wind Farm Connections

Strathy South, Strathy Wood, Armadale, Melvich and Kirkton

November 2023

Visit the project website by scanning the QR code, or use the following URL:

www.ssen-transmission.co.uk/projects/project-map/Connagill-Cluster/

Scottish & Southern Electricity Networks

TRANSMISSION

Contents

Who we are

We are SSEN Transmission, the trading name for Scottish Hydro Electric Transmission. We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network.

SSEN Transmission is part of SSE Group which also includes SSEN Distribution, SSE Renewables, SSE Thermal, SSE Energy Solutions, SSE Airtricity (Northern Ireland), and SSE Pacifico (Japan).

Find out more at **sse.com/what-we-do**

Our network consists of underground and subsea cables, overhead lines on wooden poles or steel towers, and electricity substations. It extends over a quarter of the UK's land mass, crossing some of its most challenging terrain.

Our first priority is to provide a safe and reliable supply of electricity to our communities. We do this by taking the electricity from generators and transporting it at high voltages over long distances through our transmission network for onwards distribution to homes and businesses in villages, towns and cities.

Our operating area is home to vast renewable energy resources and this is being harnessed by wind, hydro and marine generation. Working closely with National Grid, the GB transmission System Operator, we also enable these electricity generators to connect to the transmission system by providing their connections and allowing the electricity generated by them to be transported to areas of demand across the country.

Scotland's transmission network has a strategic role to play in supporting delivery of the UK and Scotland's Net Zero targets.

We're already a mass exporter of renewable energy, with around two thirds of power generated in our network area exported to demand centres further south. By 2050, the north of Scotland is expected to need 40GW of low carbon energy capacity to support net zero delivery. For context, we currently have around 8GW of renewable generation connected in the north of Scotland.

As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland. These costs are shared between all those using the transmission system, including generation developers and electricity consumers. Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers' Pension Plan Board.

As a stakeholder-led business, SSEN Transmission is committed to inclusive stakeholder engagement, and we conduct this at an 'Advanced' level as assessed by AccountAbility, the international consulting and standards firm.

Cluster Overview

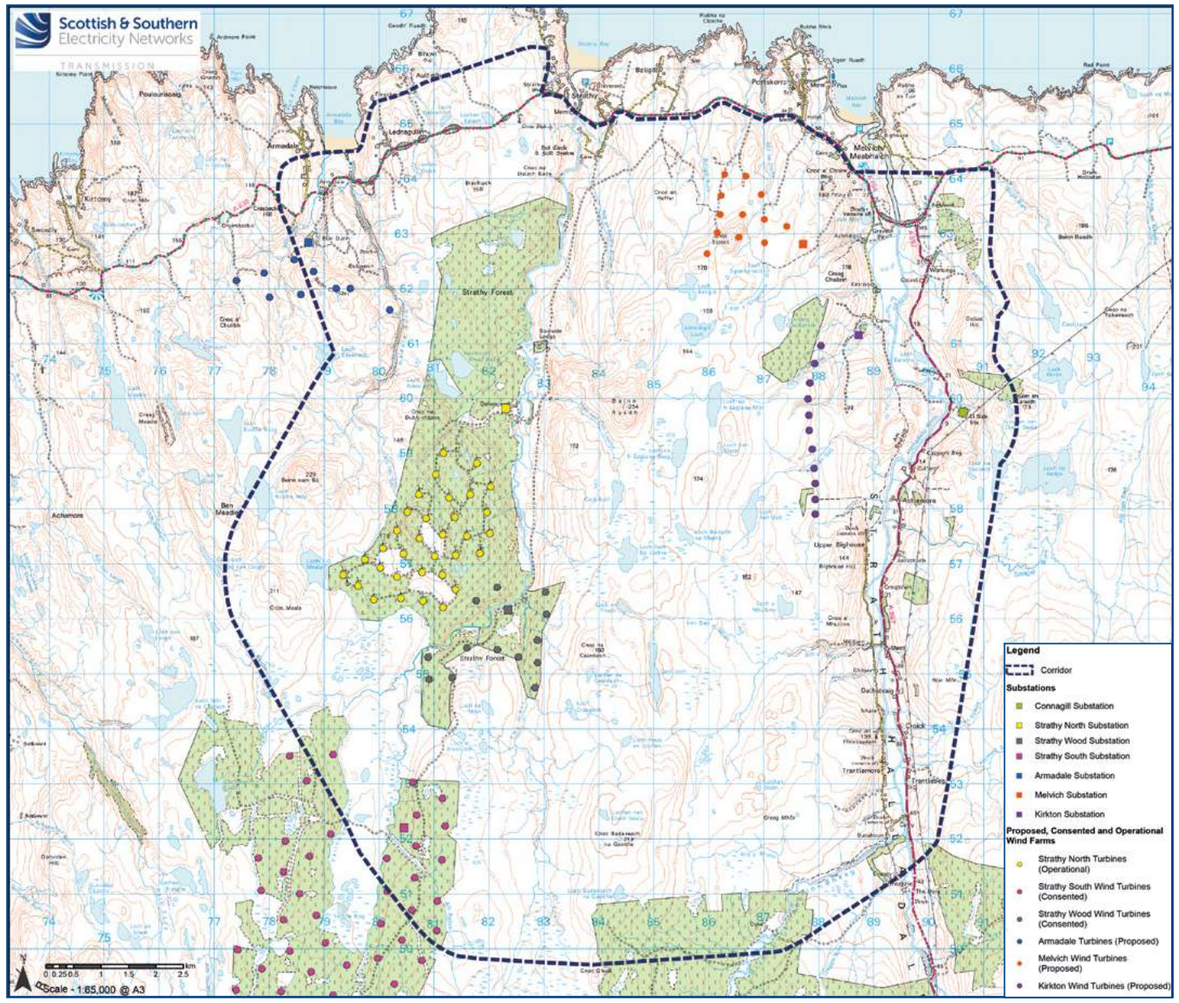
Need for the Project

SSEN Transmission are required to provide connections for five proposed wind farms in the Strathy area and together these projects are known as The Connagill Cluster.

The Connagill Cluster comprises the recently consented Strathy Wood (65 Megawatts (MW)) and Strathy South (208MW) wind farms and the proposed Armadale (58MW), Melvich (58 MW) and Kirkton (53 MW) wind farms.

Under our Network Operators Licence we are required to deliver these connections in a technically efficient, co-ordinated and economic manner, whilst having the least practicable impact on people and the environment. All connections are to be provided at 132 Kilovolts (kV) (132,000 volts) and are proposed to be accommodated on both wood pole and steel lattice overhead lines (OHL).

The average height of the wood poles is between 13 and 16 metres (m), up to 18m, with an average span of between 70 and 100m. The average height of the 132kV lattice towers is between 27 and 33m, up to 40m and with an average span of 250m. The average height of the 275kV lattice towers is between 44 and 50m, up to 60m and with an average span of 300m.



Overview of the Projects

Construction of the existing trident wood pole which connects Strathy North wind farm to Connagill substation was completed in 2015.

Optioneering studies have been ongoing since 2021 to connect the consented Strathy South, Strathy Wood and proposed Armadale wind farms to the transmission network.

The initial optimal technology solution for each connection was via overhead line (OHL) supported by 'trident H' wood pole and this was presented to Statutory Consultees in 2022 during an informal project update. Since then, two further connections have since been agreed for the proposed Melvich and Kirkton wind farms and it is no longer the optimal solution from a technical, operational or environmental perspective to have numerous separate wood pole OHL's running in parallel for long distances for each connection.

Extensive further review has, therefore, been carried out to identify a rationalised approach to facilitate all of the connections. This rationalised approach is outlined in the table below.

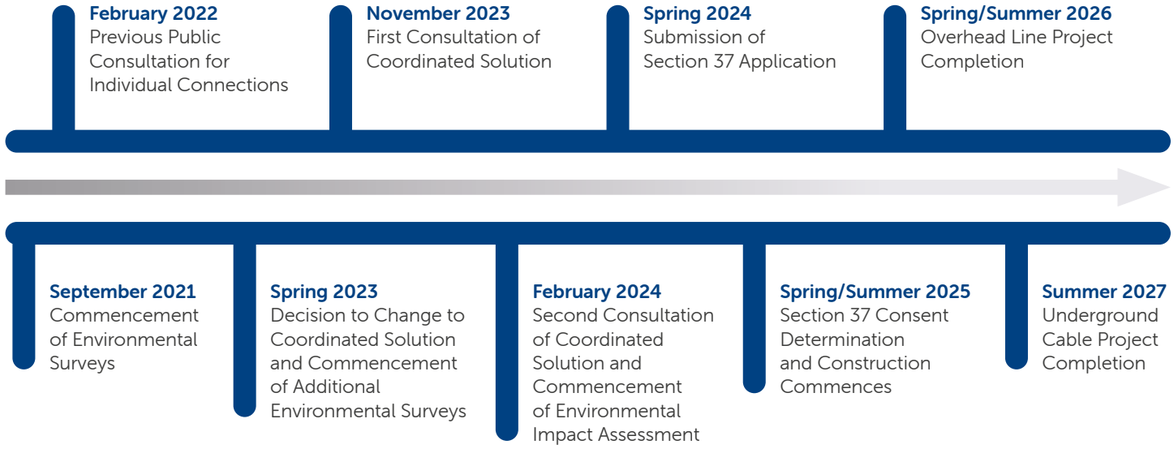
All connections are shown on the large printed banners displayed in the public exhibition.

Project	Technology Solution	Description
Strathy South and Strathy Wood	132 kV underground cable connection	From Strathy South wind farm substation to a point in the vicinity of Strathy Wood wind farm substation.
	132 kV OHL supported by steel structure	From Strathy Wood substation, a new double circuit 132 kV OHL supported by steel structures would be constructed to provide shared infrastructure to transport electricity generated by both Strathy Wood and Strathy South wind farm.
	275 kV OHL supported by steel structure	To allow for future proofing, a new 275 kV OHL supported by steel structures would continue the connection (from a point to be determined) to Connagill 275/132 kV substation. The OHL would be operated at 132 kV.
Armadale Wind Farm	132 kV trident wood pole OHL	The works would include a single circuit 132 kV trident wood pole OHL between Armadale wind farm substation to a 'T-in" connection onto the proposed double circuit 275 kV OHL. The proposed 275 kV OHL supported by steel structures would complete the connection into Connagill 275/132 kV substation.
Melvich and Kirkton Wind Farms	132 kV trident wood pole OHL	These works would include a short span of single circuit 132 kV trident wood pole OHL (<500 m) between each wind farm substation and a 'T-in' connection onto the existing Strathy North to Connagill trident H-wood pole OHL.

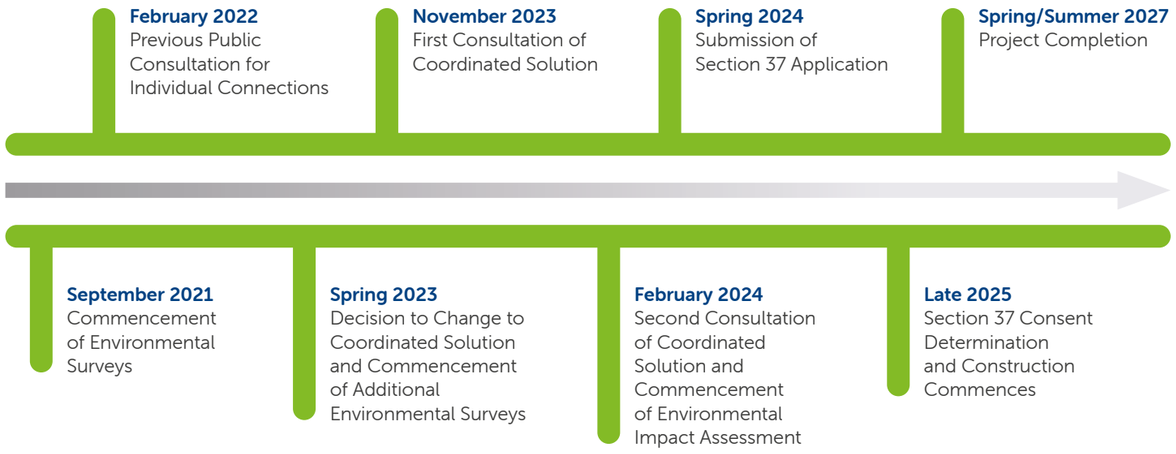
Project Timelines

Current forecasted programme subject to change

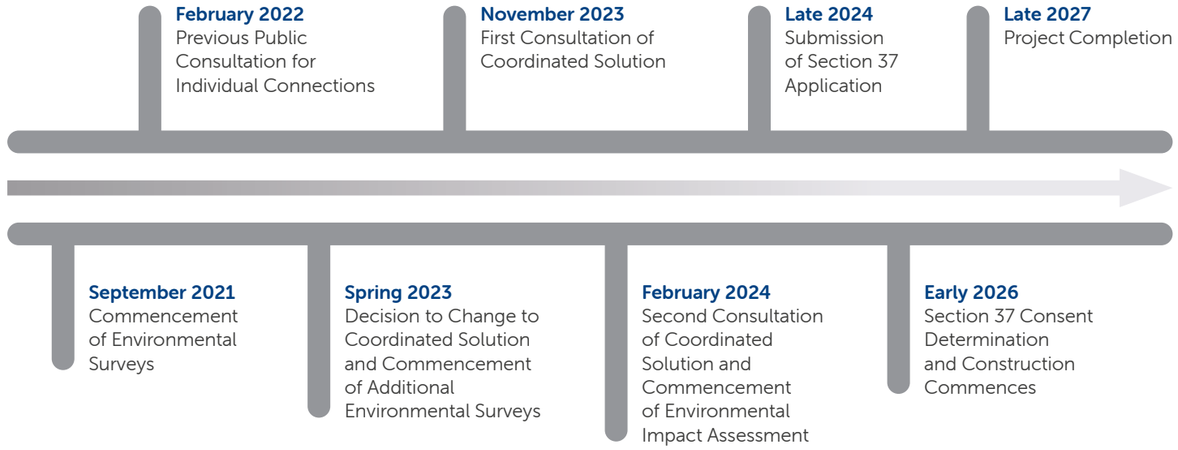
Strathy South to Strathy North



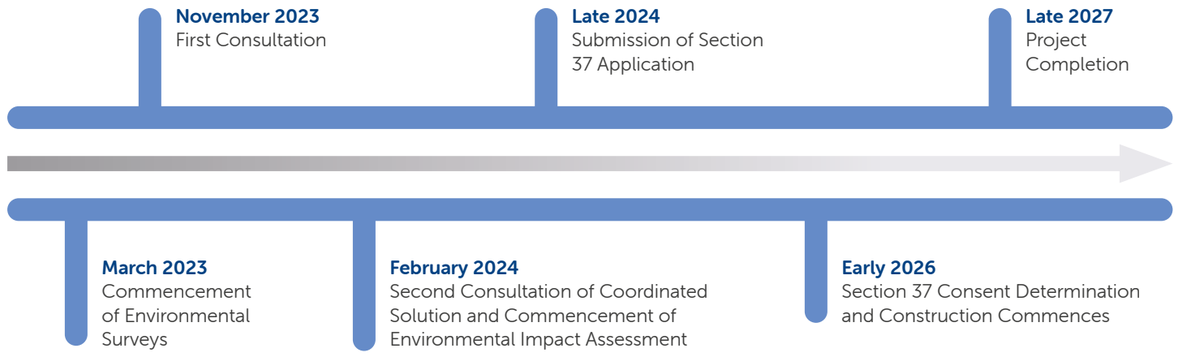
Strathy North to Connagill



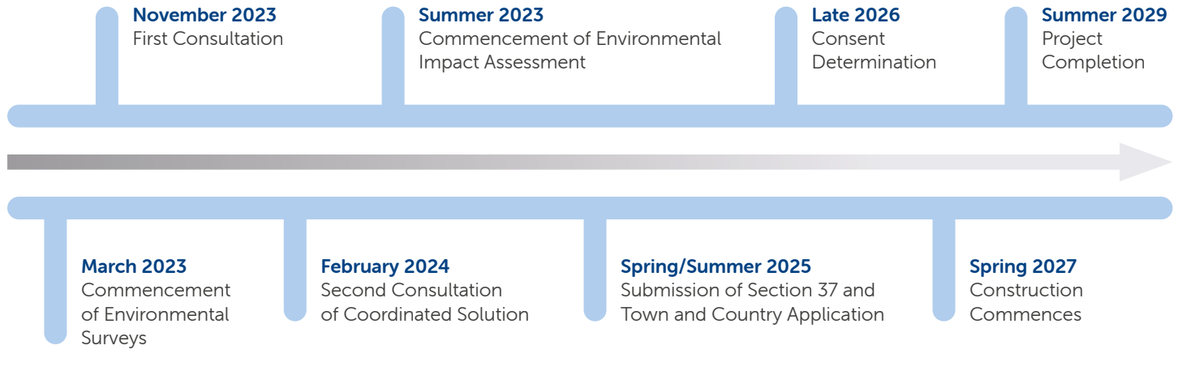
Armadale



Melvich and Kirkton



Switching Station



Meeting our obligations

Our Transmission Operators licence requires us to provide best value for customers and GB consumers. As a natural monopoly, SSEN Transmission are closely regulated by the GB energy regulator Office of Gas and Electricity Markets (OFGEM), who determine how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network. These costs are shared between all those using the transmission system, including generation developers and electricity consumers. We therefore work to strict price controls which means the following environmental, engineering and economic considerations form a key part of our routeing process:

Environmental Assessments

Desk-based assessments using available mapping and GIS (Geographic Information Systems) data, together with initial site walkovers by specialists, have been undertaken to gather baseline information. This is crucial to enable us to understand the key environmental constraints and sensitivities within the connection Corridor.

This work has been carried out during 2020-21 and has helped to identify key environmental issues including landscape and visual amenity, sensitive habitats, protected ecology and ornithology, forestry, hydrology, hydrogeology, recreation and cultural heritage.

Following confirmation of a optimal route and alignment for both connections, further detailed studies and assessment work will be undertaken to support the consenting process in 2022.

Consenting

Before a project progresses to consent application stage (under Section 37 of the Electricity Act 1989), a Screening Opinion is requested from the Scottish Ministers (through the Energy Consents Unit) to clarify whether the project falls within the thresholds of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. If the project meets or exceeds certain criteria, then it is deemed to be an EIA Development and any application for consent must be accompanied by a formal EIA Report. If it is not EIA Development, SSEN Transmission will provide equivalent environmental information through a voluntary Environmental Appraisal (EA) Report.

Strathy Wood has already been screened as an EIA Development, and a scope for the EIA Report has been agreed with Scottish Ministers. Strathy South and Armadale will be screened for EIA in Q1 2024.

Engineering and Economic Considerations

In addition to the suite of environmental assessments undertaken, the following engineering and economic considerations form a key part of our routeing process:

- Construction costs and buildability (largely affected by ground conditions, such as peat/rock/flooding/contaminated land, etc).
- Operations and maintenance requirements.
- Outage requirements and network constraints.
- Vicinity to other electrical OHL and underground structures.
- Vicinity to any other utility, overhead or underground.
- Proximity to wind turbines and wind farm infrastructure.
- Communications masts and infrastructure.
- Urban development.
- Forestry and biodiversity.
- Technology costs and design parameters.
- Site accessibility.
- Route length.

A summary of key environmental and engineering considerations for each route option on Strathy South and Armadale are presented in the Route Options Tables. Strathy Wood, being a shorter connection, had a simplified route options assessment undertaken previously (the project was then put on hold for a year).

Our Overhead Line Routeing and Design Process

SSEN Transmission has developed and implemented formal Guidance for the selection of routes and alignments for its new Overhead Lines (OHL).

The main aim of the Guidance is to provide a consistent approach to the selection of new OHL alignments and is underpinned by our statutory obligations to: 'Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we 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'.

These duties capture the principal objective of the routeing process which is to balance technical and cost considerations with environmental considerations, to select a proposed alignment which is economically viable, technically feasible, minimises impacts on important resources or features of the environment and reduces disturbance to those living in it, working in it, visiting it or using it for recreational purposes.

Key Stages

For new OHL projects, the process follows four principal stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance. This staged process leads to the identification of a proposed overhead line alignment which is capable of being granted consent by the Scottish Government under Section 37 of the Electricity Act 1989. The key stages are:

Stage 1:
Strategic Options Assessment/Routeing Strategy
The starting point in all OHL projects is to establish the need for the project and to select the optimal strategic option to deliver it. This process will be triggered by the preparation of a number of internal assessments and documents which identify the technology to be used and the point on the existing Transmission network where a connection can be made.

In the case of Strathy South, Strathy Wood and Armadale this point is at Connagill substation utilising both "Trident" wood pole and steel lattice OHL technology. The general strategy is to minimise the amount of new OHL within the Caithness & Sutherland Peatlands protected area. The Routeing Strategy also determines which of the following stages are required.

Stage 2:
Corridor Selection
Corridor Selection seeks to identify possible corridors which are as short as practicable, which are not constrained by altitude or topography and which would avoid, where possible, any interaction with man-made infrastructure and features of environmental sensitivity.

Corridors may be 1km wide or may extend over many kilometres in width, depending on the scale and length of the project. For the projects included in this consultation, and for wind farms in general, the Corridor stage is omitted as the location of the wind farm and point of connection on the network naturally define a Corridor of a few kilometres in width. Routing a new OHL any further afield than this would be too expensive and add unnecessary infrastructure to the landscape.

Stage 3:
Route Selection
Route Selection seeks to find a route within the corridor which avoids where possible physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking in to account factors such as altitude, slope, ground conditions and access. The dimensions of a route will depend on the context provided by the corridor.

A route may be several kilometres in length and may range from 200m to 1km in width, depending on the scale of the project, the nature and extent of constraints and the character of the area in question. A number of route options are usually identified and assessed, leading to a optimal route being selected.

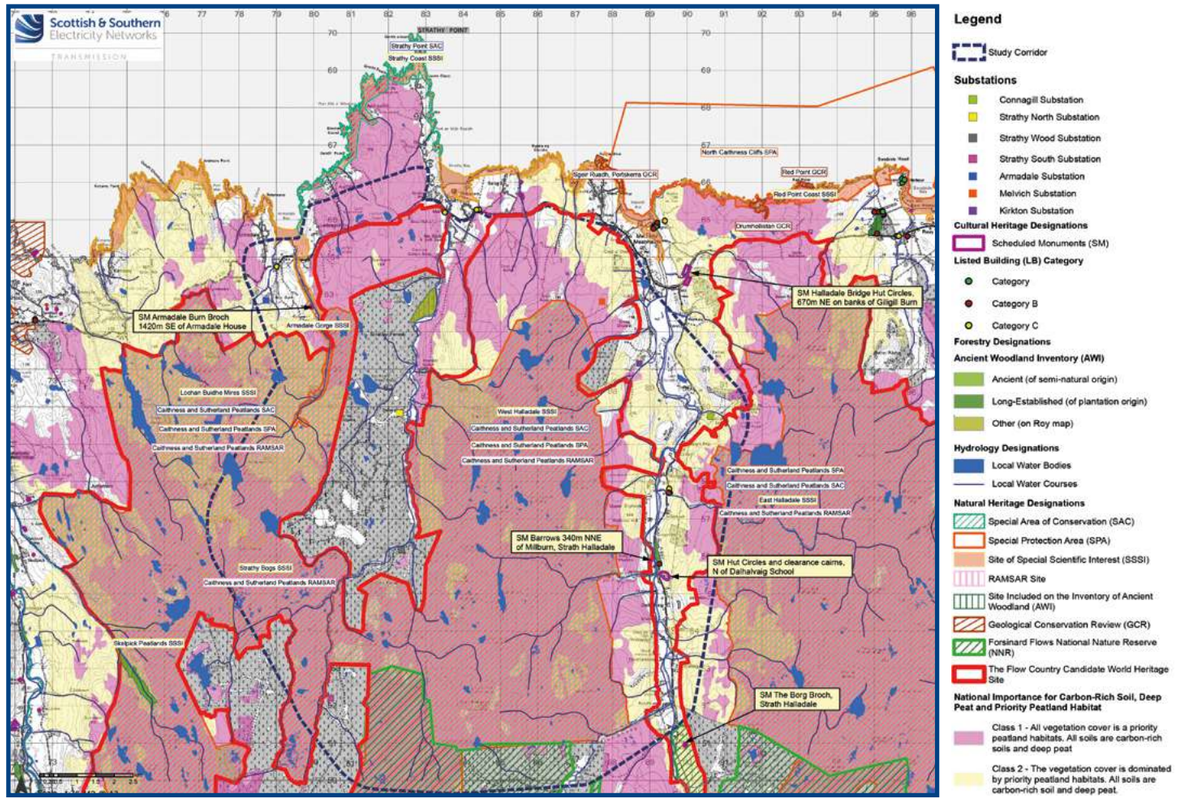
Stage 4:
Alignment Selection
Alignment Selection seeks to identify an alignment within the optimal route and to define the access strategy which will be adopted in terms of, for example, the nature and extent of temporary and/or permanent access tracks and possible road improvements. The alignment will be defined by, amongst other things, the location of terminal and angle support structures for OHLs and sealing end compounds for UGCs. It will be influenced by local constraints, such as individual properties, their aspect, and amenity; ground suitability; habitats; and cultural heritage features and setting. There may be more than one distinct alignment option through the optimal route. It is more likely however that variants to sections of an alignment may arise where there are different ways to avoid a constraint.

What happens next

The outcome of the OHL Routeing Process is to identify a Preferred Alignment, which following stakeholder engagement with the public, statutory bodies and landowners, is finalised as a Proposed Alignment to be taken forward for formal environmental assessment and consent application. A further pre-application consultation on our detailed proposals will be held in the spring of 2024.

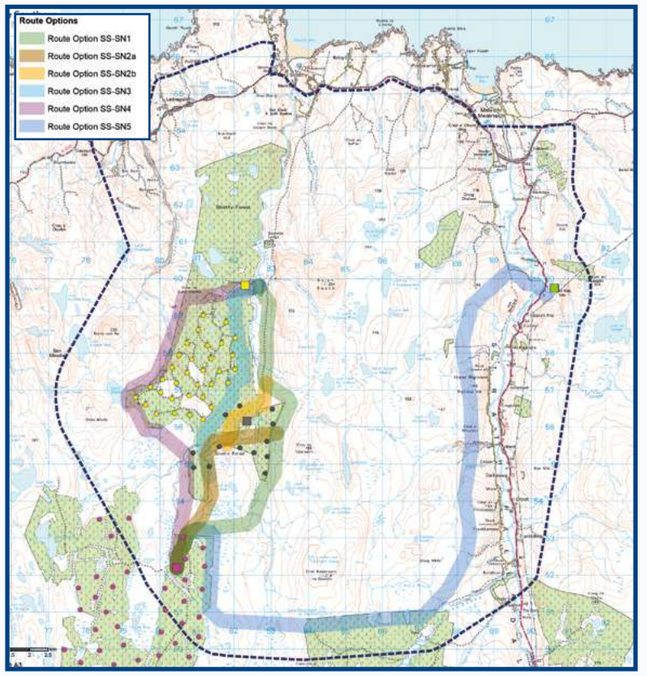
Routeing Stage Key Environmental Constraints

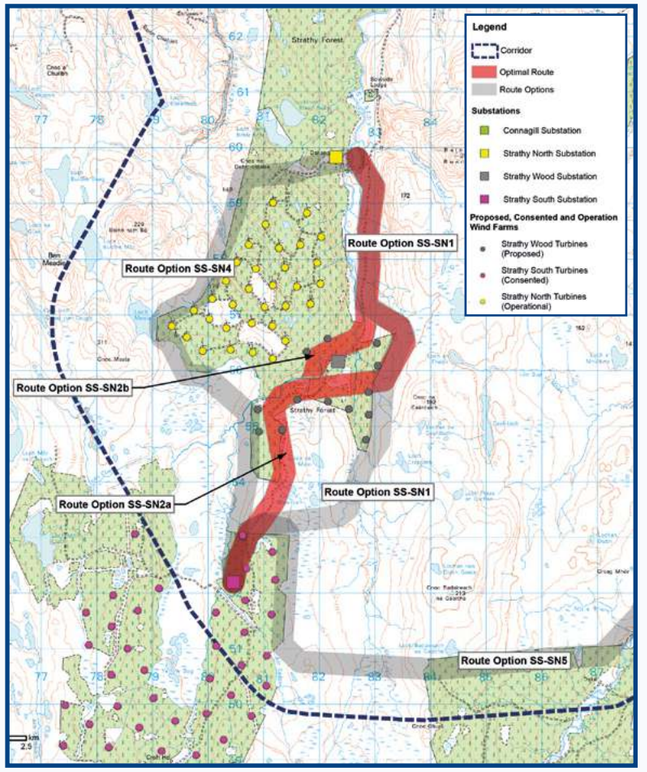
This figure shows some of the key environmental constraints within the Connagill Cluster which have been considered when assessing potential OHL routes.



The proposed Flow Country World Heritage Site straddles Caithness and Sutherland and elements of the Connagill Cluster are located within the proposed heritage site. When assessing potential overhead line (OHL) routes, consideration has been given to minimising potential impacts on all of the habitats which make up the Flow Country World Heritage Site including peatland vegetation, bog pools and bird and insect species.

Routeing Stage – Strathy South to Strathy North





Potential impacts on the Caithness and Sutherland Peatlands Special Protection Area (SPA), Special Area of Conversation (SAC), Ramsar, and associated Site of Special Scientific Interest (SSSI) designations by all route options.

Minimising impact on sensitive habitats including blanket bog by all route options is key. Route Options 2a, 2b and 3 are slightly less constrained by sensitive habitats, with much of their length through plantation or felled woodland habitat.

Route 5 has greater potential for indirect impacts on designated sites in Strath Halladale and Route Option 2b has potential for direct impact on Braerathy settlement.

There is potential for collision risk to bird species, notably divers, particularly in proximity to Route option 4.

For all route options, there are no major infrastructure crossings, minimal road crossings and all are situated away from known occupied dwellings.

There is difficult terrain to negotiate including slopes, waterbodies and bogs, particularly for Route Options 1, 2a, 2b and 5. Proximity to watercourses and traversing flood zones, particularly for Route Option 2b, 4 and 5.

The presence of wind turbines for Route Options 1, 2a, 2b, and 3 is a constraint due to the buffeting effect they have on OHL.

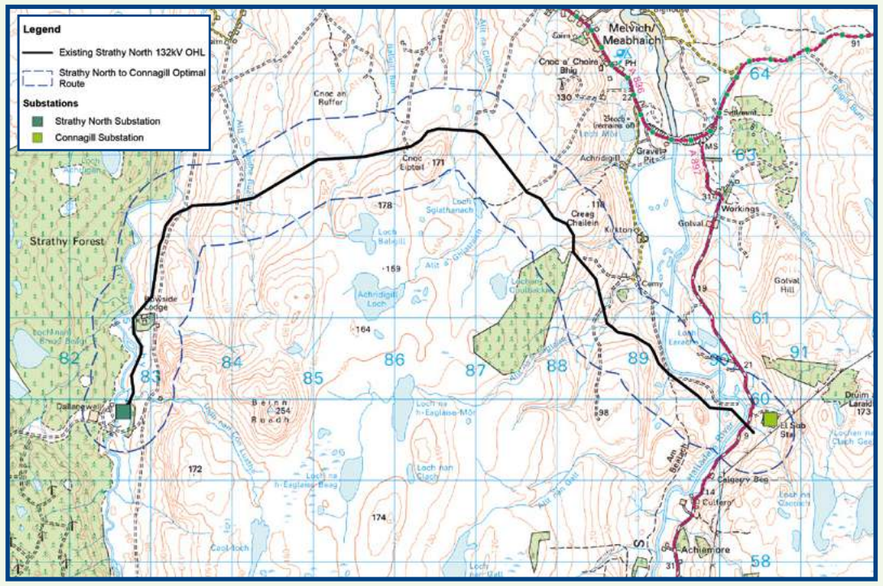
Looking at construction access, Route Option 3 and 4 have poor access opportunities, whereas Route Option 1, 2a and 2b are in proximity to an existing track.

The optimal route is considered to be Route 1 and incorporating either Route 2a or 2b so that it follows an existing access track closely and reduce the route's presence within the Caithness and Sutherland Peatlands SAC and SPA.

Although the route traverse's ecological designations, there are opportunities to avoid or minimise impacts on qualifying habitats and features of the designated sites at alignment stage.

The conclusions of the routeing study recommended that through the constrained section of the Optimal Route, as it passes within the Caithness and Sutherland Peatlands SPA between Strathy South substation and Strathy Wood substation, the connection should utilise underground cable technology to minimise impacts on nearby sensitive qualifying diver species.

Routeing Stage – Strathy North to Connagill

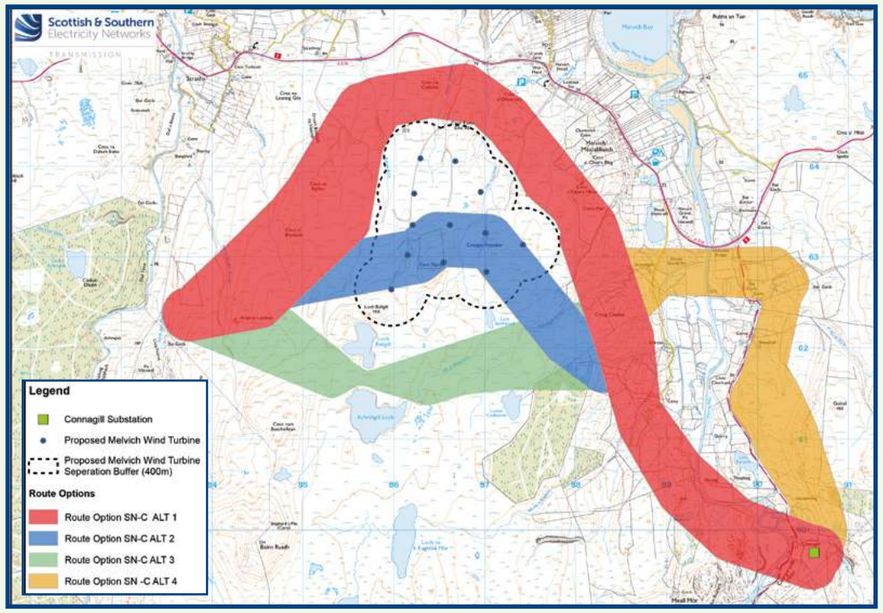


Optimal Route

A review of the 2014 consented Strathy South Wind Farm overhead line (OHL) concluded that the route remains the optimal route.

Further engineering studies, carried out to consider an OHL supported by steel structures as opposed to wood pole, confirmed it is suitable.

Once constructed, more than half of the existing Strathy North OHL would be dismantled and removed helping to reduce visual and landscape impacts.



Alternative Route

Should the proposed Melvich Wind Farm be granted consent (shown by blue dots), the required minimum separation distance between a proposed OHL and the wind turbines cannot be met within the current optimal route (as per the description above and shown in green on the adjacent figure).

In this instance, an alternative route or technology solution would need to be considered. An optioneering exercise is currently underway to consider an alternative route. Some of the key constraints being considered are:

Caithness and Sutherland Peatlands SAC, SPA, Ramsar and underlying SSSI designations.

Deep peat and Candidate World Heritage Site Status. Proximity to settlement and recreational receptors including the North Coast 500.

Routeing Stage - Armadale

Environmental constraints identified during the routeing stage include the potential impacts on the Armadale Gorge SSSI by all routes.

Route Option A3a crosses approximately 5km of the Caithness and Sutherland Peatlands SPA, SAC, Ramsar plus SSSI designations while Route Option 2 would bring development in closer proximity to the A836 and settlements and potentially impact on the perceived openness of the landscape visibility from outdoor and recreational tourist routes, this option is least optimal.

There is also potential for direct impact on an area of archaeological interest of regional significance along Route 2 and impacts on commercial conifer plantations and interaction with an area of Ancient Woodland along Route 3b.

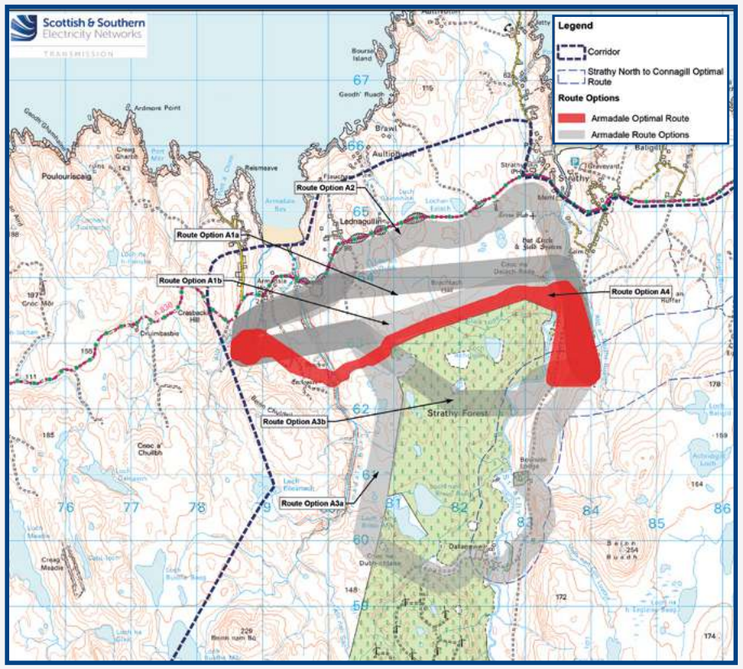
From an environmental perspective, the comparative analysis of route options has highlighted that Route Options A-1a, A-1b, A-2, A-3b and A-4 are broadly optimal given their reduced presence in natural heritage designations, despite all options crossing the Armadale Gorge SSSI.

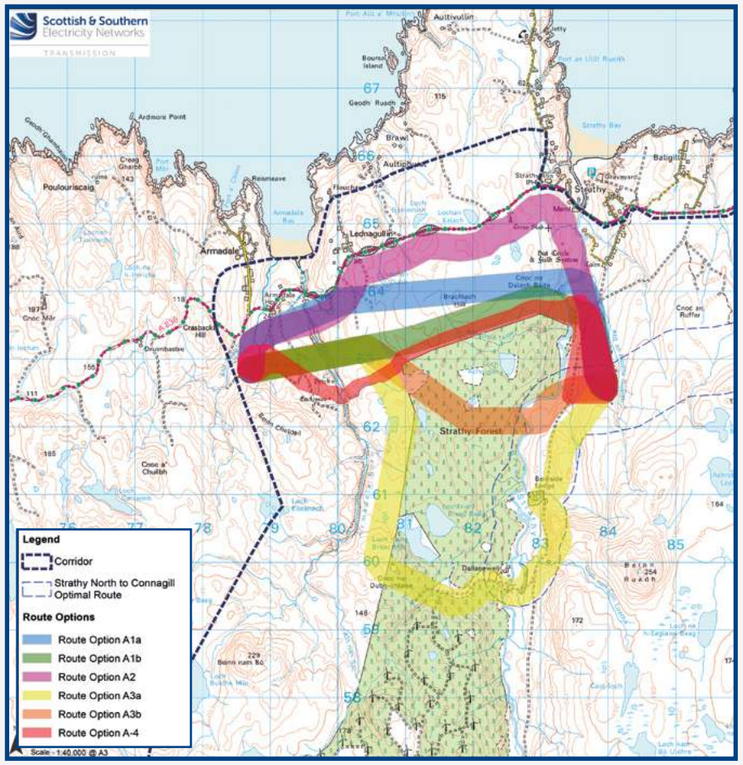
From an engineering perspective, there is more challenging terrain along Route Options 1a and 2 for constructability but there is the benefit of more existing access opportunities along this routes for use during construction.

Each route would cross the River Strathy however Route Option 2 would follow the length for a longer stretch which increases flooding risk. Route Option 2 also brings infrastructure in closer proximity to residential dwellings. Route Option 3a is a significantly longer route increasing construction timescales.

Taking the various constraints and route preferences into account, on balance it is considered unanimously from an environmental, engineering and cost preference, that Route Option A-4 is the optimal option.

Route Option A-4 would set the development back from the A836 and settlements to the north, with views being backclothed by the forestry beyond and would avoid development being within the key vista of the Armadale Gorge broch scheduled monument.





Other Infrastructure Works

Melvich and Kirkton Wind Farm Network Connections

SSEN Transmission have agreed to provide two further connections in the area; for the proposed Melvich and Kirkton Wind Farm projects.

It is currently anticipated that both will connect into Connagill substation by repurposing the existing Strathy North 132kV trident wood pole line.

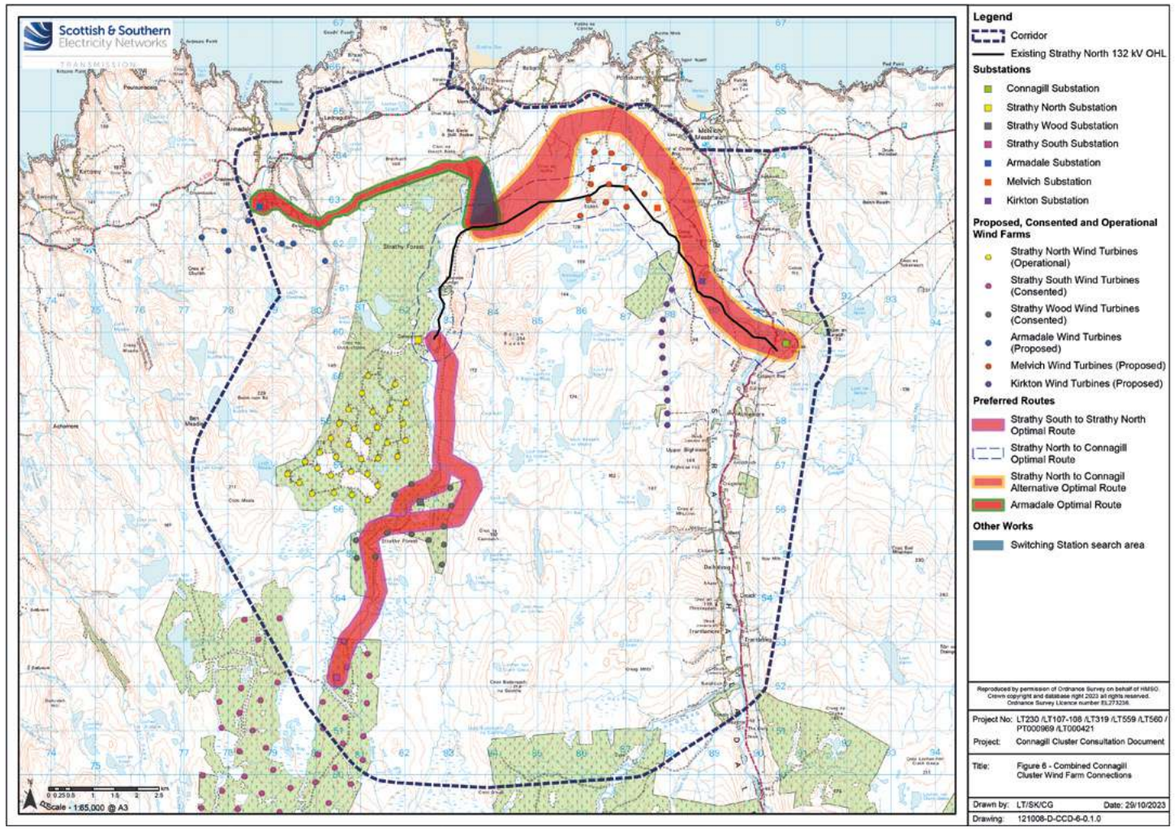
To connect to this existing wood pole line, a short section of 132kV wood pole OHL (less than 1km in length) would be required for each connection.

Switching Station

To facilitate the numerous connections comprising the cluster, a new switching station will be required to collect all incoming circuits onto a double busbar before taking these through the steel structure 275kV OHL.

A wide search area has been assessed and refined to the location below which was selected in proximity to the Strathy North to Connagill optimal route and an optioneering exercise will be carried out to identify an optimal site within this location.

The switching station is anticipated to have a footprint of approximately 250 by 160m.



Connagill Cluster - Next Steps

Alignment Selection

For the overhead lines (OHL), following the identification of the optimal route for each connection, as outlined in this exhibition, the projects move into the Alignment Selection phase. There may be more than one distinct alignment option through the optimal route but it is more likely that variants to sections of an alignment may arise where there are different ways to avoid a constraint, e.g. navigating an archaeological feature.

In the coming months there will also be activity on site as our subcontractors undertake activities including protected species surveys, peat-probing and ground investigation works. These are all part of the iterative design process which informs where we propose to locate the infrastructure.

Switching Station Site Selection

SSEN Transmission has developed and implemented formal Guidance for the selection of switching stations.
The main aim of the Guidance is to provide a consistent approach to the selection of new sites and is underpinned by our statutory obligations to:

'Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we 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'.

These duties capture the principal objective of the process which is to balance technical and cost considerations with environmental considerations, to select a proposed site which is economically viable, technically feasible, minimises impacts on important resources or features of the environment and reduces disturbance to those living in it, working in it, visiting it or using it for recreational purposes.

For new site selection projects, the process follows four principal stages, as follows:

Stage 0: Pre-Site Selection Activities – Strategic Connections Options Appraisal
Stage 1: Initial Site Screening
Stage 2: Detailed Site Selection
Post Site Selection Activities – Consenting Process

For the Connagill Cluster switching station we are currently at Stage 1.

Further Consultation

As designs progress for all aspects of the Connagill Cluster we will undertake further consultation and public exhibition in 2024 and we are currently targeting a second event in February. At this next event we hope to share preferred alignments for OHL's and the preferred location for the switching station. This will also provide an opportunity for us to present the results of any feedback from this first event that we have been able to accommodate into our designs. Alignments for Melvich and Kirkton wind farm connections will also be presented at the next event with an opportunity to provide feedback on these proposals.

Construction of an overhead wood pole line

A typical "H" wood pole installation requires foundations of approximately 2.5m by 3m across and to a depth of around 2 metres. To minimise construction impact and the requirement for access tracks, helicopters are used wherever possible to help deliver the materials to the site.

The picture below shows a typical helicopter delivery of the steel work used on the top of a pole and the baulk timbers used in the foundation at the base of each structure. Helicopters are also used to assist with the stringing of the conductors.

Above is a typical example of an angle wood pole which requires additional stays. Note that stays are not usually required on non-angle poles unless ground or weather conditions dictate.

Construction of access tracks

Access tracks will only be constructed where access by all-terrain vehicles or the use of trackway is not feasible.

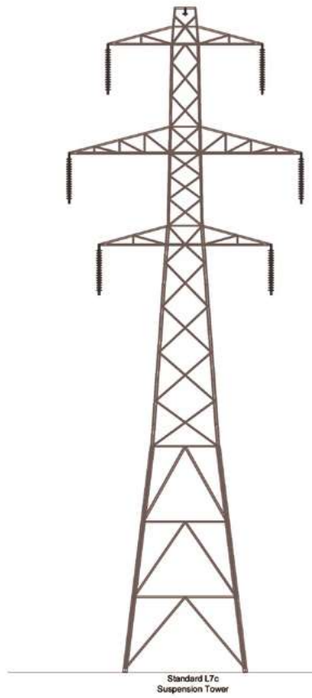
Access tracks will be constructed with imported and/or locally sourced material.

Access tracks are not usually retained after construction of the overhead line. Permanent access may be required to terminal structures where an OHL meets a cable section.

Construction of a steel lattice tower

A steel lattice tower will have larger foundation requirements per structure (approximately 5x5m for 132kV, 7.5x7.5m for 275kV) than wood poles, however, they have a much longer span length between towers which provides opportunities to micro-site towers away from areas of sensitivity. Permanent access is typically required to facilitate safe operational and maintenance activities, particularly in more remote areas.

A picture of an operational steel lattice tower, similar to the technology being proposed for this project.



The above image shows the construction of a new steel lattice tower.

What happens now and how do I have my say?

We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations. Without this valuable feedback, the project development team would be unable to progress projects and reach a balanced proposal.

We are keen to receive your views and comments in regards to the following questions:

- Have we adequately explained the need for these projects?
- Do you feel sufficient information has been provided to enable you to understand what is being proposed on, and why?
- Do you agree with the rationalised approach SSEN Transmission has proposed?
- Has the reasoning for the technology options being proposed by SSENT been adequately explained?
- Do you agree with the optimal routes we have identified?
- Are there any additional factors, or environmental features, that you consider are important and should be brought to the attention of the project team?
- Do you have any particular concerns or queries on the proposed connections?

Recite me

To support everyone online, we provide accessibility and language options on our website through 'Recite Me'. The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar."

Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to, Community Liaison Manager. We will be seeking feedback from the members of the public and Statutory Bodies until **Friday 12th January 2024**.

All received feedback will be assessed and the proposed options adapted where necessary.

Lisa Marchi-Grey
Community Liaison Manager

lisa.marchi@sse.com

+44 (0) 7825 015 507

Lisa Marchi-Grey
Scottish and Southern Electricity Networks,
10 Henderson Road,
Inverness,
IV1 1SN

Additional information

Information will also be made available via the project webpage and social media channels:

Project website:
ssen-transmission.co.uk/projects/project-map/Connagill-Cluster/

Follow us on Facebook:
@ssencommunity

Follow us on Twitter:
@SSETransmission

Your feedback
Strathy South to Strathy North

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS. (Please tick one box per question only)

Q1 Have we adequately explained the need for the Strathy South to Strathy North section of the cluster?

☐ Yes ☐ No ☐ Unsure

Comments:

Q2 Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?

☐ Yes ☐ No ☐ Unsure

Comments:

Q3 Do you agree with the rationalised approach that SSEN Transmission has proposed?

☐ Yes ☐ No ☐ Unsure

Comments:

Q4 Has the reasoning for the technology options being proposed been adequately explained?

☐ Yes ☐ No ☐ Unsure

Comments:

Q5 Do you agree with our identified optimal route connecting Strathy South to Strathy North?

☐ Yes ☐ No ☐ Unsure

Comments:

Q6 Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection processes?

Q7 Do you have any particular concerns or queries on the proposed connection from Strathy South to Strathy North?

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at **unsubscribe@ssen.co.uk** or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at **www.ssen.co.uk/privacynotice**

If you would like to be kept informed of progress on the project please tick this box. ☐

Thank you for taking the time to complete this feedback form. Please submit your completed form by one of the methods below:

Post: Scottish and Southern Electricity Networks, 10 Henderson Road, Inverness, IV1 1SN
Email: lisa.marchi@sse.com
Online: ssen-transmission.co.uk/projects/project-map/Connagill-Cluster/
Download: Comments forms and all the information from today's event will also be available to download from the project website. The feedback form and all information provided in this booklet can also be downloaded from the project websites

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.

Your feedback
Strathy North to Connagill substation

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS. (Please tick one box per question only)

Q1 Have we adequately explained the need for the Strathy North to Connagill substation connection project?

☐ Yes ☐ No ☐ Unsure

Comments:

Q2 Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?

☐ Yes ☐ No ☐ Unsure

Comments:

Q3 Do you agree with the rationalised approach that SSEN Transmission has proposed?

☐ Yes ☐ No ☐ Unsure

Comments:

Q4 Has the reasoning for the technology options being proposed been adequately explained?

☐ Yes ☐ No ☐ Unsure

Comments:

Q5 Do you agree with our identified optimal route connecting Strathy North to Connagill substation?

☐ Yes ☐ No ☐ Unsure

Comments:

Q6 Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection process?

Q7 Do you have any particular concerns or queries on the proposed connection from Strathy North to Connagill substation?

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at **unsubscribe@ssen.co.uk** or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at **www.ssen.co.uk/privacynotice**

If you would like to be kept informed of progress on the project please tick this box. ☐

Thank you for taking the time to complete this feedback form. Please submit your completed form by one of the methods below:

Post: Scottish and Southern Electricity Networks, 10 Henderson Road, Inverness, IV1 1SN
Email: lisa.marchi@sse.com
Online: ssen-transmission.co.uk/projects/project-map/Connagill-Cluster/
Download: Comments forms and all the information from today's event will also be available to download from the project website. The feedback form and all information provided in this booklet can also be downloaded from the project websites

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Your feedback
Armadale Wind Farm Connection

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS. (Please tick one box per question only)

Q1 Have we adequately explained the need for the Armadale Wind Farm connection project?

☐ Yes ☐ No ☐ Unsure

Comments:

Q2 Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?

☐ Yes ☐ No ☐ Unsure

Comments:

Q3 Do you agree with the rationalised approach that SSEN Transmission has proposed?

☐ Yes ☐ No ☐ Unsure

Comments:

Q4 Has the reasoning for the technology options being proposed been adequately explained?

☐ Yes ☐ No ☐ Unsure

Comments:

Q5 Do you agree with our identified optimal route connecting Armadale Wind Farm?

☐ Yes ☐ No ☐ Unsure

Comments:

Q6 Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection process?

Q7 Do you have any particular concerns or queries on the proposed connection for Armadale Wind Farm?

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at **unsubscribe@ssen.co.uk** or by clicking on the unsubscribe link that will be at the end of each of our emails.

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ANNEX E – MAIL ADVERTISEMENT (ALIGNMENT STAGE) – MAY 2024

Connagill Cluster

Wind farm connections and Strathy switching station

Scottish & Southern Electricity Networks
TRANSMISSION

Public consultation event

SSEN Transmission invites you to share your views with us.

Scottish and Southern Electricity Networks (SSEN) Transmission are holding it's second consultation exhibition on our proposals to provide connections for five proposed wind farms in the Strathy area. Known as the Connagill Cluster, the connections comprise the consented Strathy Wood and Strathy South wind farms, as well as the proposed Armadale, Melvich, Kirkton wind farms and Strathy switching station.

This consultation is focused on SSEN Transmissions alignment for the new grid connection which will include both wood pole and steel lattice overhead line technology. It will also include the site selection for the new switching station. We would welcome your feedback to help further develop the project.

The event will be held on:

Monday 20 May, 3–7pm
Strathy Village Hall Strathy, KW14 7RZ

If you are unable to join the event or have difficulty reviewing the project information online, please contact the Community Liaison Manager and they will arrange for information to be posted to you.

If you have any questions, please do not hesitate to contact our Community Liaison Manager:

Lisa Marchi
10 Henderson Road,
Inverness, IV1 1SN
Tel: +44 7825 015 507
Email: lisa.marchi@sse.com
@ssentransmission @SSETransmission

To find out more, visit the project website by scanning the QR code, or use the following URL: **tinyurl.com/mrxwrvmr**

ANNEX F – SSEN ADVERTISEMENT (ALIGNMENT STAGE) – MAY 2024

20
MAY
2024

Time:
15:00 - 19:00

Location:
Strathy Village Hall, Strathy, KW14 7RZ

Local authorities:
Highland

Related projects:
Connagill Cluster Wind Farm Connections

Category:
Consultation

Connagill Cluster and Strathy Switching Station Public Consultation Event

We are pleased to be hosting a public consultation event for Connagill Cluster Wind Farm Connections and Strathy Switching Station.

We are hosting a public consultation event. We will be sharing our potential alignments for the overhead line.

We invite all interested parties to attend, meet the team, and share your views.

The event will be held on:

Date: 20 May 2024
Time: 3pm – 7pm
Venue: Strathy Village Hall, Strathy KW14 7RZ

If you are unable to attend the public event all the material that will be on display will be available to be downloaded here from 10 May 2024.

Please let us know if you require information in an adapted format such as paper copy, large print or braille and we will work with you to accommodate your preferences. We are happy to accommodate all reasonable requests for adapted communications.

ANNEX G – ALIGNMENT STAGE CONSULTATION BOOKLET – MAY 2024

Scottish & Southern Electricity Networks

TRANSMISSION

Connagill Cluster Wind Farm Connections

Strathy South, Strathy Wood, Armadale, Melvich, Kirkton and Switching Station

May 2024

Contents

The consultation event will be taking place on:

20 May 2024 - Strathy Village Hall Strathy, KW14 7RZ - 3pm – 7pm

Powering change together

The time has come to further enhance Scotland's energy infrastructure, providing power for future generations as we move towards net zero.

The shift to a cleaner, more sustainable future is about more than climate change. It's about ensuring future generations have the same opportunities to thrive as we have all had.

Countries around the world are investing in their energy infrastructure to support the demands of modern economies and meet net zero targets. The UK is leading the way in building a modern, sustainable energy system for the future.

We all have a part to play

When it comes to net zero, we have to be in it together. The UK and Scottish Governments have ambitious net zero targets, and we're playing our part in meeting them.

We work closely with National Grid Electricity System Operator to connect vast renewable energy resources – harnessed by solar, wind, hydro and marine generation – to areas of demand across the country. Scotland is playing a big role in meeting this demand, exporting two thirds of power generated in our network.

But there's more to be done. By 2050, the north of Scotland is predicted to contribute over 50GW of low carbon energy to help deliver net zero. Today, our region has around 9GW of renewable generation connected to the network.

At SSEN Transmission, it is our role to build the energy system of the future.

We're investing £20 billion into our region's energy infrastructure this decade, powering more than ten million UK homes and 20,000 jobs, 9,000 of which will be here in Scotland.

Find out more

Scan the QR code with your smartphone to find out more about how these policies have been assessed and determined.

Who we are

We're responsible for maintaining and investing in the electricity transmission network in the north of Scotland. We're part of SSE plc, one of the world's leading energy companies with a rich heritage in Scotland that dates back more than 80 years. We are also closely regulated by the GB energy regulator Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network.

What we do

We manage the electricity transmission network across our region which covers a quarter of the UK's land mass, crossing some of the country's most challenging terrain. We connect renewable energy sources to our network in the north of Scotland and then transport it to where it needs to be. From underground subsea cables and overhead lines (OHL) to electricity substations, our network keeps your lights on all year round.

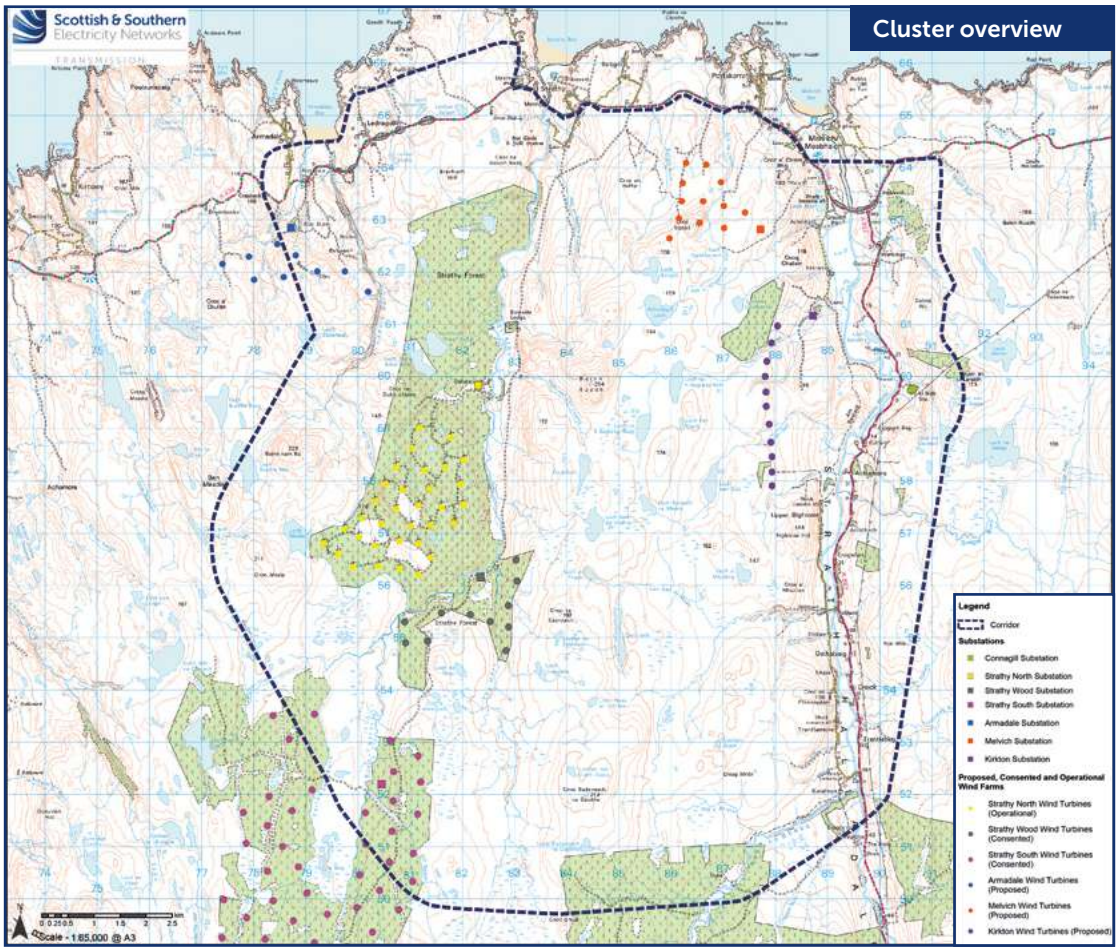
Working with you

We understand that the work we do can have an impact on our host communities. So we're committed to minimising our impacts and maximising all the benefits that our local developments can bring to your area.

We're regularly assessed by global sustainability consultancy AccountAbility for how we engage with communities. That means we provide all the information you need to know about our plans and how they will impact communities like yours. We want to hear people's views, concerns, or ideas and harness local knowledge so that our work benefits their communities: today and long into the future. You can share your views with us at: ssen-transmission.co.uk/talk-to-us/contact-us

Cluster overview

SSEN Transmission are required to provide connections for five proposed wind farms in the Strathy area and together these projects are known as The Connagill Cluster.



SSEN Transmission is required to construct new transmission infrastructure for five consented and/or proposed wind farms to the existing transmission network at Connagill 275/132kV substation.

The five connections under consideration are the consented Strathy South and Strathy Wood wind farms and the proposed Armadale, Melvich and Kirkton wind farms. Together the projects are known as the 'Connagill Cluster Grid Connections' and are recognised as National Development under National Planning Framework 4.

Under our Network Operators Licence we are required to deliver these connections in a technically efficient, coordinated and economic manner, whilst having the least practicable impact on people and the environment.

All connections are to be provided at 132 Kilovolts (kV) (132,000 volts) and are proposed to be accommodated on both wood pole and steel lattice overhead lines (OHL).

The average height of the wood poles is between 13 and 16 metres (m), up to 18m, with an average span of between 70 and 100m. The average height of the 132kV lattice towers is between 27 and 33m, up to 40m and with an average span of 250m. The average height of the 275kV lattice towers is between 44 and 50m, up to 60m and with an average span of 300m.

To facilitate the five grid connections, a new switching station, known as Strathy Switching Station, would also be required to collect all incoming circuits onto a double busbar before taking these through a 132kV OHL supported by a steel structure to Connagill 275/132kV substation.

Overview of the projects

Construction of the existing trident wood pole which connects Strathy North wind farm to Connagill substation was completed in 2015.

Optioneering studies have been ongoing since 2021 to connect the consented Strathy South, Strathy Wood and proposed Armadale wind farms to the transmission network.

The initial optimal technology solution for each connection was via overhead line (OHL) supported by 'trident H' wood pole and this was presented to Statutory Consultees in 2022 during an informal project update. Since then, two further connections have since been agreed for the proposed Melvich and Kirkton wind farms and it is no longer the optimal solution from a technical, operational or environmental perspective to have numerous separate wood pole OHL's running in parallel for long distances for each connection.

Extensive further review has, therefore, been carried out to identify a rationalised approach to facilitate all of the connections. This rationalised approach is outlined in the table below. Also included is the need for the switching station.

All connections are shown on the large printed banners displayed in the public exhibition.

Project	Technology Solution	Description
Strathy South and Strathy Wood	132kV underground cable connection	From Strathy South wind farm substation to a point in the vicinity of Strathy Wood wind farm substation.
	132kV OHL supported by steel structure	From Strathy Wood substation, a new double circuit 132kV OHL supported by steel structures would be constructed to provide shared infrastructure to transport electricity generated by both Strathy Wood and Strathy South wind farms.
	275kV OHL supported by steel structure	To allow for future proofing, a new 275kV OHL supported by steel structures would continue the connection (from the switching station) to Connagill 275/132kV substation. While the OHL will be operated at 132kV it will be built to a 275kV specification to provide an element of futureproofing.
Armadale Wind Farm	132kV trident wood pole OHL	The works would include a single circuit 132kV trident wood pole OHL between Armadale wind farm substation to a 'T-in" connection onto the proposed double circuit 275kV OHL. The proposed 275kV (but operated at 132kV) OHL supported by steel structures would complete the connection into Connagill 275/132kV substation.
Kirkton and Melvich Wind Farms	132kV trident wood pole OHL	These works would include a short span of single circuit 132kV trident wood pole OHL (<500 m) between each wind farm substation and a 'T-in' connection onto the existing Strathy North to Connagill trident H-wood pole OHL.
Switching Station	A node on the network to allow safe control of the electricity network. This could include convergence of multiple circuits, transformation of voltage or other functions to maintain and operate the electricity network.	To facilitate the five grid connections, a new switching station, known as Strathy Switching Station, would also be required to collect all incoming circuits onto a double busbar before taking these through a 275kV OHL (operated at 132kV) supported by a steel structure to Connagill 275/132kV substation.

Project timelines

Current forecasted programme subject to change

Strathy South to Strathy North

September 2021
Commencement of Environmental Surveys

February 2022
Previous Public Consultation for Individual Connections

Spring 2023
Decision to Change to Coordinated Solution and Commencement of Additional Environmental Surveys

November 2023
First Consultation of Coordinated Solution

May 2024
Second Consultation of Coordinated Solution and Commencement of Environmental Impact Assessment

Summer 2024
Submission of Section 37 Application

Summer 2025
Section 37 Consent Determination and Construction Commences

Spring/Summer 2026
Overhead Line Project Completion

Spring/Summer 2027
Underground Cable Project Completion

Strathy North to Connagill

September 2021
Commencement of Environmental Surveys

February 2022
Previous Public Consultation for Individual Connections

Spring 2023
Decision to Change to Coordinated Solution and Commencement of Additional Environmental Surveys

November 2023
First Consultation of Coordinated Solution

May 2024
Second Consultation of Coordinated Solution and Commencement of Environmental Impact Assessment

Summer 2024
Submission of Section 37 Application

Late 2025
Section 37 Consent Determination and Construction Commences

Spring/Summer 2027
Project Completion

Armadale

September 2021
Commencement of Environmental Surveys

February 2022
Previous Public Consultation for Individual Connections

Spring 2023
Decision to Change to Coordinated Solution and Commencement of Additional Environmental Surveys

November 2023
First Consultation of Coordinated Solution

May 2024
Second Consultation of Coordinated Solution and Commencement of Environmental Impact Assessment

Late 2024
Submission of Section 37 Application

Early 2026
Section 37 Consent Determination and Construction Commences

Late 2028
Project Completion

Melvich and Kirkton

March 2023
Commencement of Environmental Surveys

November 2023
First Consultation

May 2024
Second Consultation of Coordinated Solution

Autumn 2024
Commencement of Environmental Impact Assessment

Summer 2025
Submission of Section 37 Application

Late 2026
Section 37 Consent Determination and Construction Commences

Late 2028
Project Completion

Project timelines

Current forecasted programme subject to change

Switching Station

March 2023
Commencement of Environmental Surveys

November 2023
First Consultation

May 2024
Second Consultation of Coordinated Solution

Late 2024
Commencement of Environmental Impact Assessment

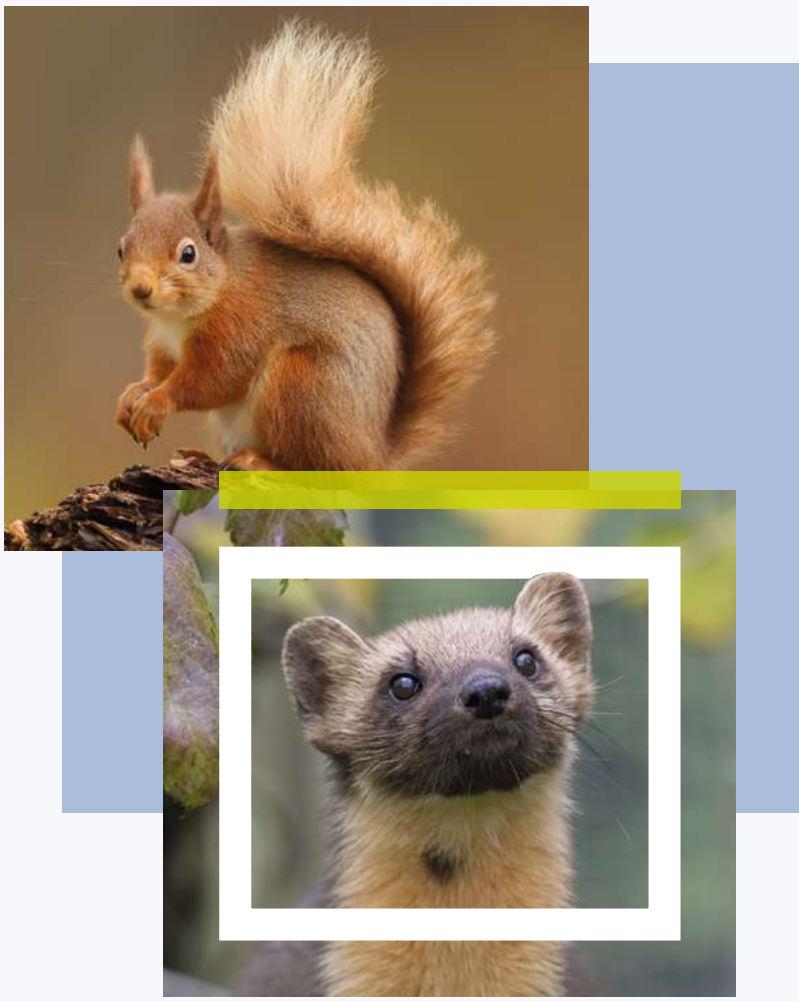
Summer 2025
Submission of Section 37 and Town and Country Application

Late 2026
Consent Determination

Spring 2027
Construction Commences

Summer 2029
Project Completion

Meeting our obligations



Our Transmission Operators licence requires us to provide best value for customers and GB consumers.

As a natural monopoly, SSEN Transmission are closely regulated by the GB energy regulator Office of Gas and Electricity Markets (OFGEM), who determine how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network.

These costs are shared between all those using the transmission system, including generation developers and electricity consumers.

We therefore work to strict price controls which means the following environmental, engineering and economic considerations form a key part of our routeing process.

Environmental assessments

Desk-based assessments using available mapping and GIS (Geographic Information Systems) data, together with initial site walkovers by specialists, have been undertaken to gather baseline information. This is crucial to enable us to understand the key environmental constraints and sensitivities within the connection Corridor.

This work has been carried out during 2020-21 and has helped to identify key environmental issues including landscape and visual amenity, sensitive habitats, protected ecology and ornithology, forestry, hydrology, hydrogeology, recreation and cultural heritage.

Following confirmation of an optimal route and alignment for both connections, further detailed studies and assessment work is being undertaken to support the consenting process in 2023 and 2024.

Consenting

Before a project progresses to consent application stage (under Section 37 of the Electricity Act 1989), a Screening Opinion is requested from the Scottish Ministers (through the Energy Consents Unit) to clarify whether the project falls within the thresholds of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. If the project meets or exceeds certain criteria, then it is deemed to be an EIA Development and any application for consent must be accompanied by a formal EIA Report. If it is not EIA Development, SSEN Transmission will provide equivalent environmental information through a voluntary Environmental Appraisal (EA) Report.

Engineering and economic considerations

In addition to the suite of environmental assessments undertaken, the following engineering and economic considerations form a key part of our routeing process:

- Construction costs and buildability (largely affected by ground conditions, such as peat/rock/flooding/ contaminated land, etc).
- Operations and maintenance requirements.
- Outage requirements and network constraints.
- Vicinity to other electrical OHL and underground structures.
- Vicinity to any other utility, overhead or underground.
- Proximity to wind turbines and wind farm infrastructure.
- Communications masts and infrastructure.
- Urban development.
- Forestry and biodiversity.
- Technology costs and design parameters.
- Site accessibility.
- Route length.

A summary of key environmental and engineering considerations for each alignment option is presented on the following pages.

Our overhead line routeing and design process

SSEN Transmission has developed and implemented formal Guidance for the selection of routes and alignments for its new Overhead Lines (OHL).

The main aim of the Guidance is to provide a consistent approach to the selection of new OHL alignments and is underpinned by our statutory obligations to: 'Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we 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'.

These duties capture the principal objective of the routeing process which is to balance technical and cost considerations with environmental considerations, to select a proposed alignment which is economically viable, technically feasible, minimises impacts on important resources or features of the environment and reduces disturbance to those living in it, working in it, visiting it or using it for recreational purposes.

Key stages

For new OHL projects, the process follows four principal stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance. This staged process leads to the identification of a proposed overhead line alignment which is capable of being granted consent by the Scottish Government under Section 37 of the Electricity Act 1989. The key stages are:

Stage 1: Strategic options assessment/routeing strategy

The starting point in all OHL projects is to establish the need for the project and to select the optimal strategic option to deliver it. This process will be triggered by the preparation of a number of internal assessments and documents which identify the technology to be used and the point on the existing Transmission network where a connection can be made.

In the case of Strathy South, Strathy Wood and Armadale this point is at Connagill substation utilising both "Trident" wood pole and steel lattice OHL technology. The general strategy is to minimise the amount of new OHL within the Caithness & Sutherland Peatlands protected area. The Routeing Strategy also determines which of the following stages are required.

Stage 2: Corridor selection

Corridor Selection seeks to identify possible corridors which are as short as practicable, which are not constrained by altitude or topography and which would avoid, where possible, any interaction with man-made infrastructure and features of environmental sensitivity.

Corridors may be 1km wide or may extend over many kilometres in width, depending on the scale and length of the project. For the projects included in this consultation, and for wind farms in general, the Corridor stage is omitted as the location of the wind farm and point of connection on the network naturally define a Corridor of a few kilometres in width. Routing a new OHL any further afield than this would be too expensive and add unnecessary infrastructure to the landscape.

Stage 3: Route selection

Route Selection seeks to find a route within the corridor which avoids where possible physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking in to account factors such as altitude, slope, ground conditions and access.

The dimensions of a route will depend on the context provided by the corridor.

A route may be several kilometres in length and may range from 200m to 1km in width, depending on the scale of the project, the nature and extent of constraints and the character of the area in question.

A number of route options are usually identified and assessed, leading to a optimal route being selected.

Stage 4: Alignment selection

Alignment Selection seeks to identify an alignment within the optimal route and to define the access strategy which will be adopted in terms of, for example, the nature and extent of temporary and/or permanent access tracks and possible road improvements.

The alignment will be defined by, amongst other things, the location of terminal and angle support structures for OHLs and sealing end compounds for UGCs. It will be influenced by local constraints, such as individual properties, their aspect, and amenity; ground suitability; habitats; and cultural heritage features and setting.

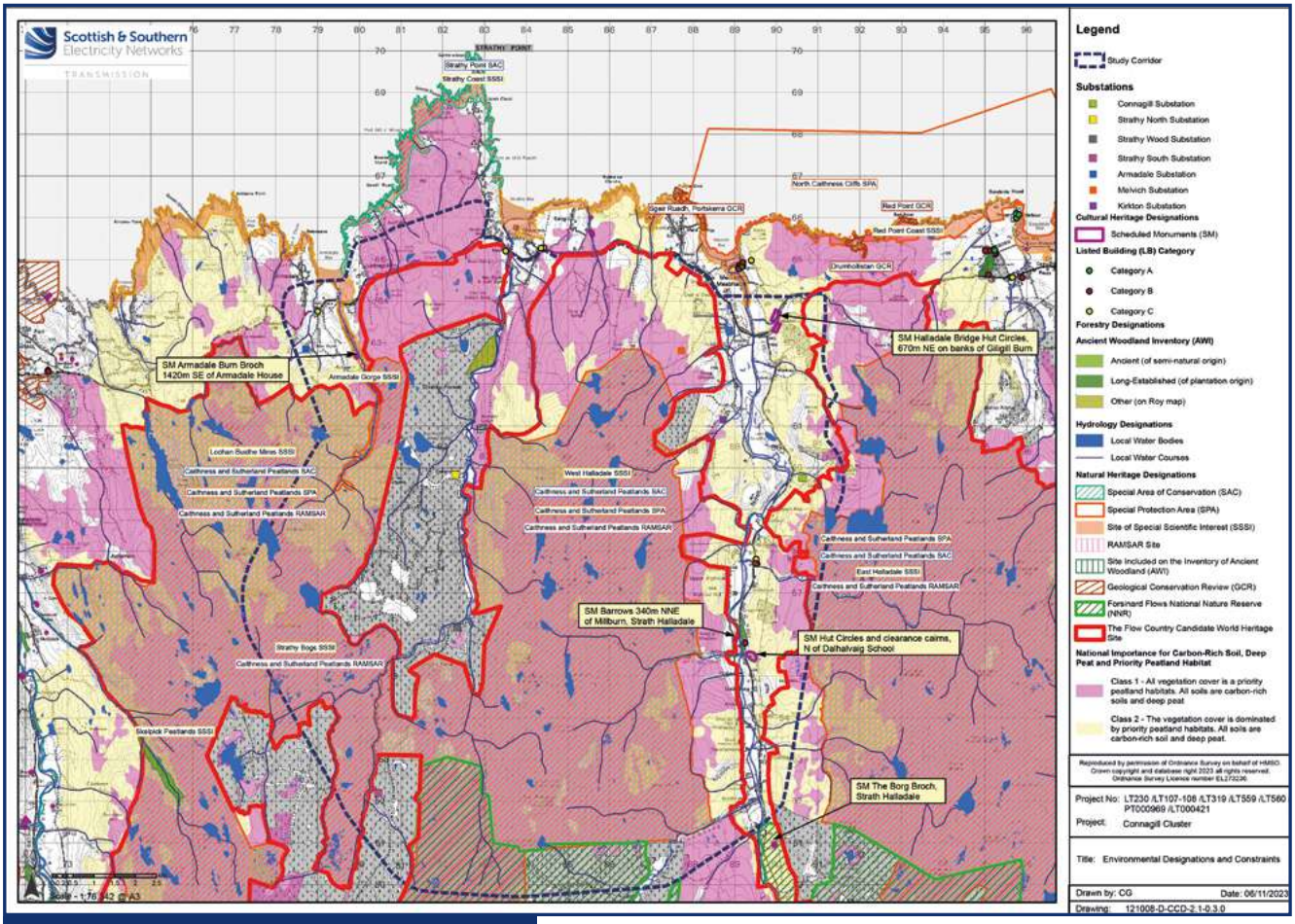
There may be more than one distinct alignment option through the optimal route. It is more likely however that variants to sections of an alignment may arise where there are different ways to avoid a constraint.

What happens next

The current status of all the connections is Alignment selection (Stage 4). Following stakeholder engagement with the public, statutory bodies and landowners, this will be finalised as a Proposed Alignment (or a Proposed Development in the case of the switching station) to be taken forward for formal environmental assessment and consent application.

Alignment stage key environmental constraints

This figure shows some of the key environmental constraints within the Connagill Cluster which have been considered when assessing potential OHL routes and alignments and also the switching station location.



Environmental Designations and Constraints

The proposed Flow Country World Heritage Site straddles Caithness and Sutherland and elements of the Connagill Cluster are located within the proposed heritage site.

When assessing potential overhead line (OHL) alignment, consideration has been given to minimising potential impacts on all of the habitats which make up the Flow Country World Heritage Site including peatland vegetation, bog pools and bird and insect species.

Alignment stage

Strathy South to Strathy North (Southern Section)

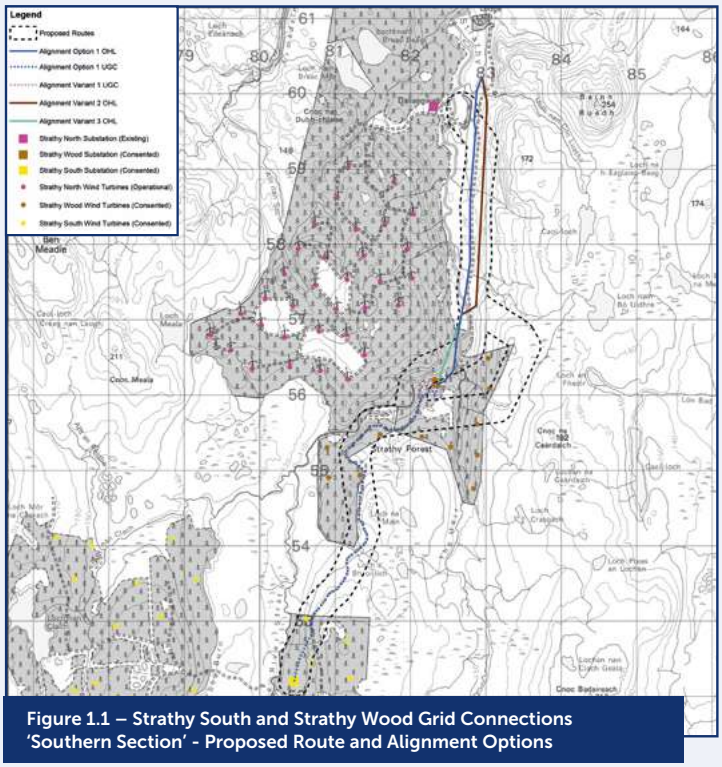


Figure 1.1 – Strathy South and Strathy Wood Grid Connections 'Southern Section' - Proposed Route and Alignment Options

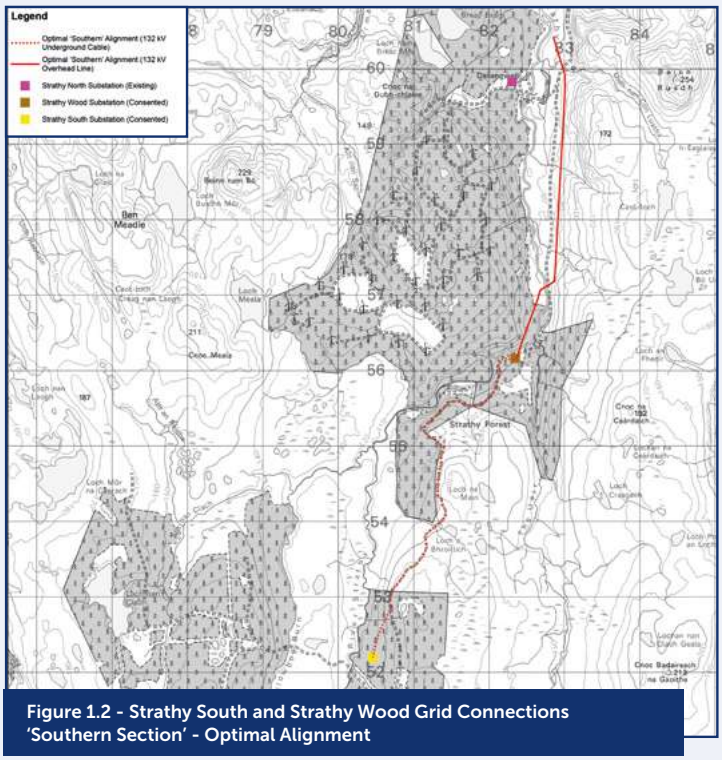


Figure 1.2 - Strathy South and Strathy Wood Grid Connections 'Southern Section' - Optimal Alignment

Potential impacts on the Caithness and Sutherland Peatlands Special Protection Area (SPA), Special Area of Conversation (SAC), Ramsar, and associated Site of Special Scientific Interest (SSSI) designations by all route options.

Alignment Option 1 (UGC) will be used up to the area of Strathy Wood Substation.

Alignment Variants 2 and 3 are considered optimal from both an environmental and engineering perspective over the comparable sections of Alignment Option 1 (OHL).

The area east of the existing track, through which Alignment Variant 2 (OHL) would traverse, is considered dominated by poorer quality habitats of the Caithness and Sutherland Peatlands SAC and consists of shallower peat. Being further from the River Strathy means that both alignment variants would cross less of the mapped floodplain.

While Alignment Variant 3 (OHL) may bring development closer to regionally significant heritage assets, through careful placement of towers and application of measures during construction, this is not considered a constraint to development.

The overall Optimal 'Southern' Alignment is, therefore, Alignment Option 1 (UGC), Alignment Variant 1 (UGC), Alignment Variant 3 (OHL) and Alignment Variant 2 (OHL), as shown on **Figure 1.2**.

Alignment stage

Strathy North to Connagill - Optimal alignment

A review of the 2014 consented Strathy South Wind Farm overhead line (OHL) concluded that the route remains the optimal route, however, as part of the assessment to rationalise the cluster, SSEN Transmission carried out a further engineering review to consider an OHL supported by steel lattice tower which resulted in some minor modifications to the 2021 Optimal Alignment to ensure sufficient clearance from the existing Strathy North 132kV OHL by the larger tower structure. This is referred to as the 'Modified Alignment'.

It was considered that the increased height of the steel lattice tower of the Modified Alignment could appear more intrusive both to sensitive bird species and to the open character of the landscape and visual receptors, compared to what was considered for the 2021 Optimal Alignment (wood pole).

The Modified Alignment would require the careful placement of towers, particularly in relation to targeting the avoidance of sensitive qualifying habitats of the Caithness and Sutherland Peatlands SAC, Ramsar and West Halladale SSSI, and regionally significant heritage assets, but would also require the application of further mitigation, at both construction and operational stages, to avoid and reduce potential effects on the qualifying interests of the designated sites.

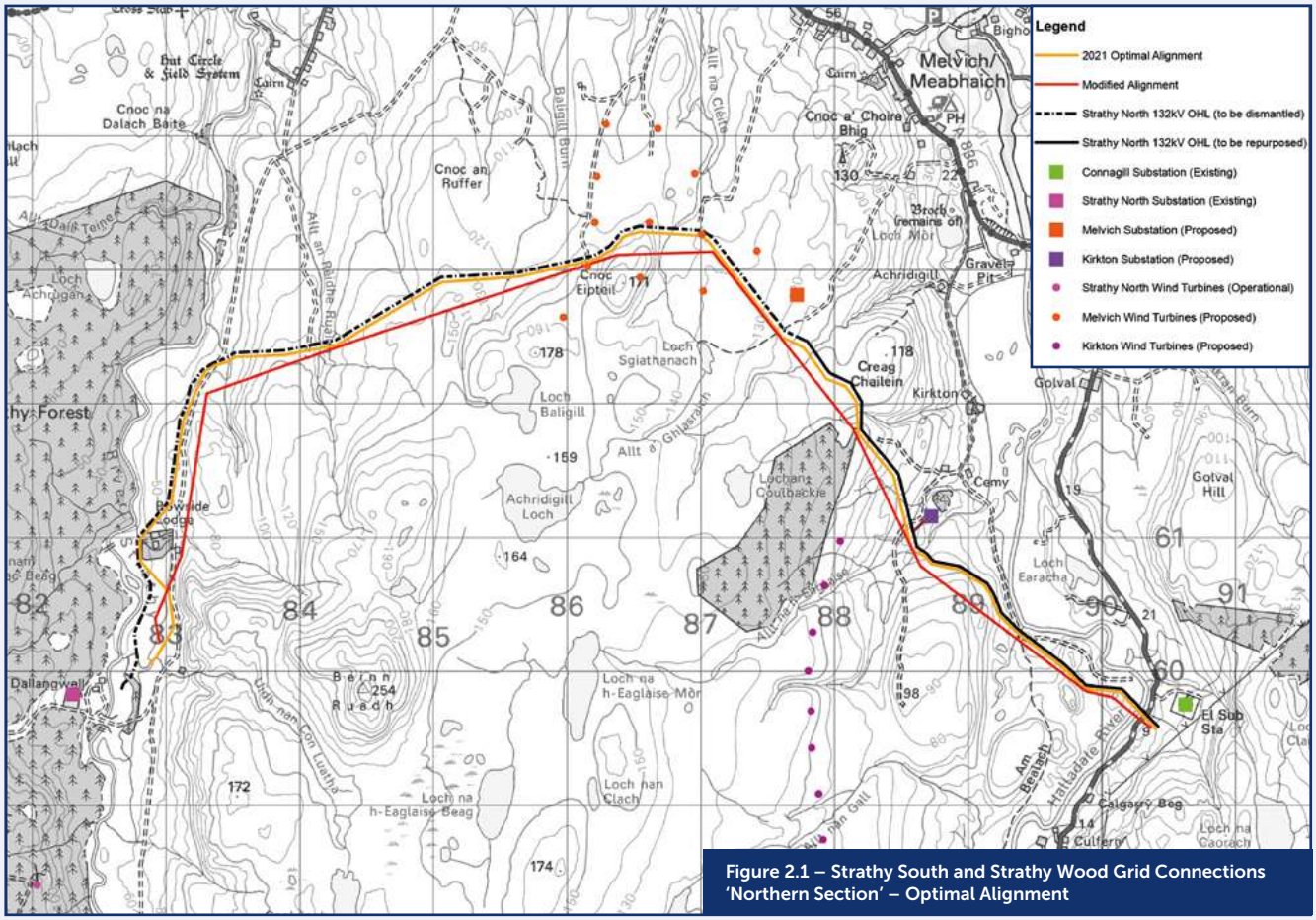


Figure 2.1 – Strathy South and Strathy Wood Grid Connections 'Northern Section' – Optimal Alignment

Strathy North to Connagill - Alternative alignment

Whilst the Modified Alignment is SSEN Transmission's preference, there has been a requirement to consider an alternative connection due to the Modified Alignment passing through the proposed Melvich wind farm. Some of the key constraints being considered are:

Alignment Variant 1 was considered optimal for both environmental and engineering as it would slightly reduce the prominence of an OHL from the A836 and settlement of Melvich to the north.

While engineering preferred Alignment Variant 2 as it would cross less Class 1 priority peatland and be closer to existing access, from an environmental perspective this option was considered the least optimal as it would bring development close to properties within Strath Halladale and would appear imposing in views and have a more notable effect on amenity.

Overall, it was considered not appropriate to progress this option. Instead, Alignment Variant 5 would allow development to be further from the strath and follow the existing OHL.

Another advantage of Alignment Variant 5 is that although it would require a section of the existing Strathy North 132kV OHL to be undergrounded, this would be at a point where the existing OHL would already be undergrounded to accommodate the separately proposed Melvich Grid Connection, thereby reducing construction challenges.

In the eastern extent, the optimal environmental option was Alignment Variant 4 due to the favourable crossing of Strath Halladale and A897.

Being further south and away from the open valley, and its use of the local landform to appear less prominent from the strath and sensitive nearby properties, make it favourable compared to all other crossings considered. Alignment Variant 4 would be situated further from the Halladale River and outwith the mapped floodplain for a longer stretch, making it preferable from a construction and maintenance perspective. The overall Optimal 'Alternative' Alignment is, therefore, Baseline Alternative Alignment, Alignment Variant 1, Alignment Variant 5 and Alignment Variant 4.

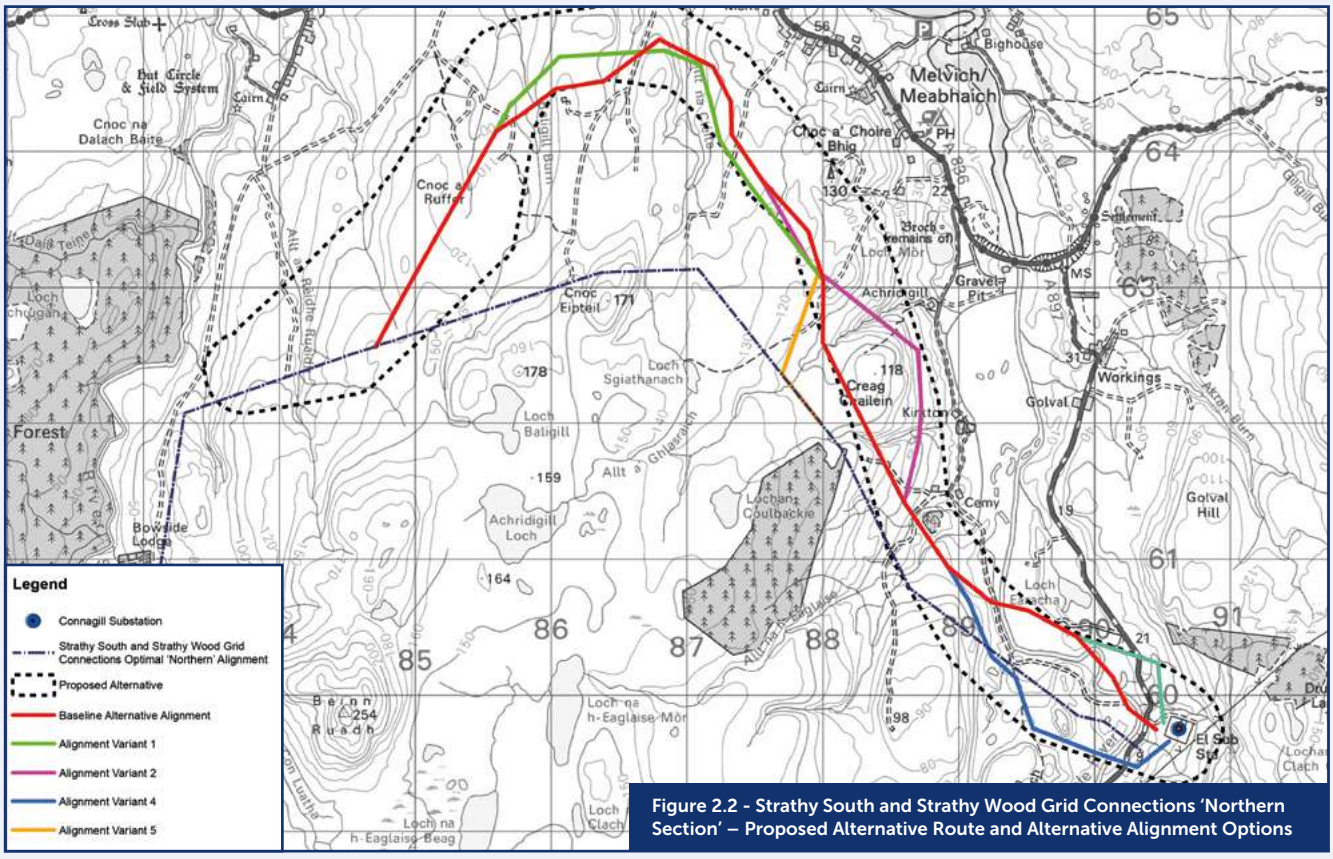


Figure 2.2 - Strathy South and Strathy Wood Grid Connections 'Northern Section' – Proposed Alternative Route and Alternative Alignment Options

Alignment stage

Armadale Wind Farm

In the western extent, both environmental and engineering consider exiting the substation to the south would be optimal, thereafter joining Alignment Variant 6.

This would slightly reduce the prominence of an OHL from the A836 and settlement to the north, with the forest plantation at Armadale substation offering an element of screening. This alignment variant would also cross shallower peat depths.

In the central section, Alignment Variant 2 was considered optimal for both environmental and engineering as the crossing point of the Armadale gorge. Once across the gorge, Alignment Variant 2 would keep development outwith the designated areas of the Caithness and Sutherland Peatlands SAC, SPA and Ramsar site, and the underlying Lochan Buidhe SSSI.

Thereafter, the Baseline Alignment would continue the connection along the edge of Strathy Forest to the River Strathy crossing.

Alignment Variant 4 would be located at a lower elevation of the Strathy valley, thereby appearing less noticeable in views from settlement and recreational routes to the north and would be less challenging to construct. Alignment Variant 4 would be set further from the River.

The overall Optimal Alignment, is therefore, Baseline Alignment, Alignment Variant 6, Alignment Variant 2, Baseline Alignment, Alignment Variant 4, as shown on **Figure 3.2**.

It should be noted that the site identified as the optimal location for the proposed Strathy Switching Station will influence the final section of alignment to its connection point on the proposed Strathy North to Connagill double circuit 132kV OHL.

Should any major environmental or engineering constraints be identified that cannot be overcome through micrositing, further appraisal will be undertaken.

Figure 3.1 – Armadale Grid Connection - Proposed Route Alignment Options

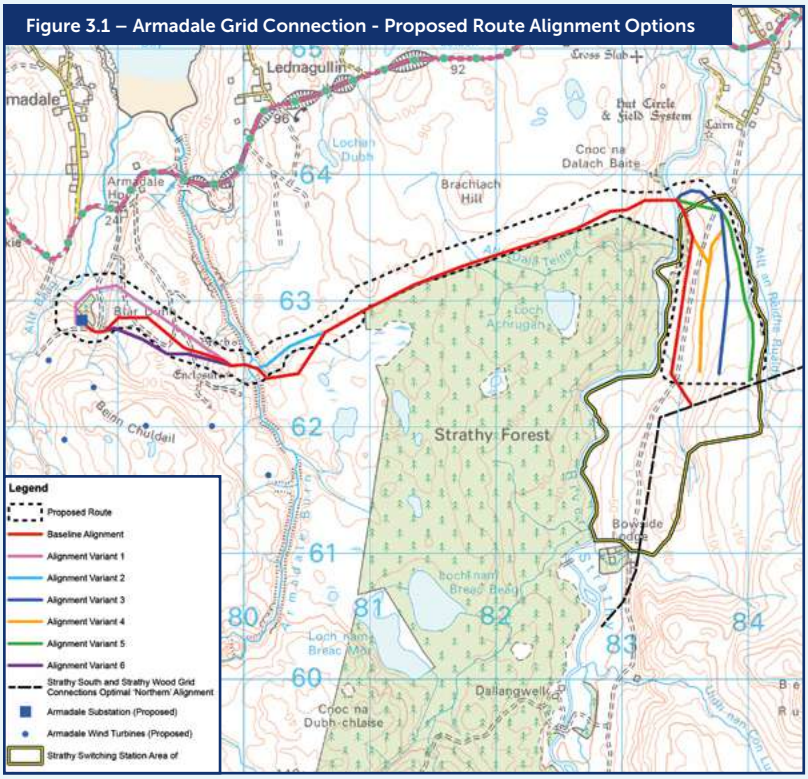
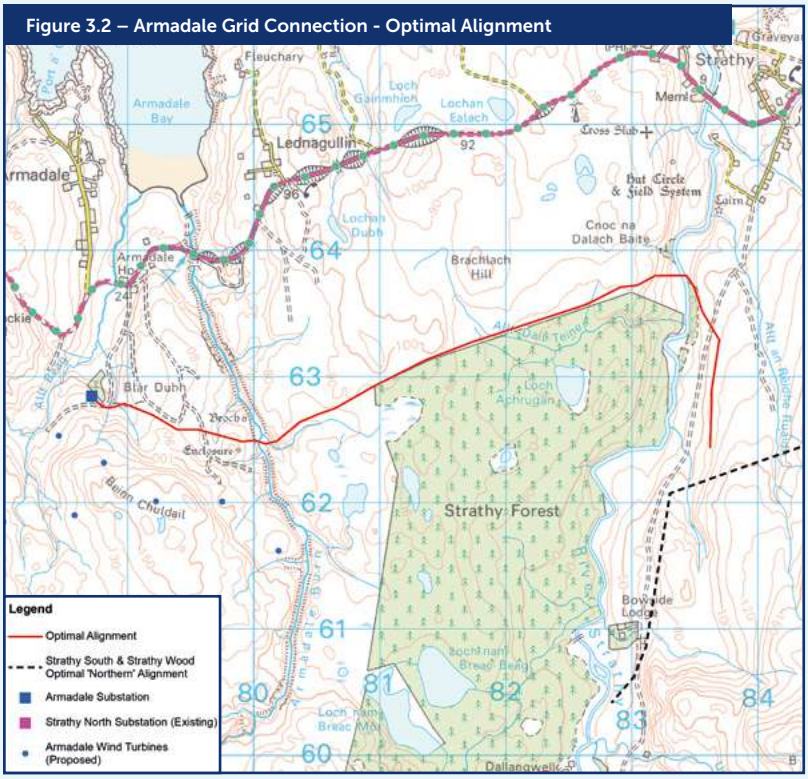


Figure 3.2 – Armadale Grid Connection - Optimal Alignment



Alignment stage

Kirkton Wind Farm

Given the similarities between the alignment options, many of the engineering constraints are comparable.

For the engineering topic areas of existing infrastructure, elevation, atmospheric pollution, contaminated land, terrain, access, angle structures, clearance distance, wind farms, communication masts and metallic pipes there is no preference between Alignment Option 1 or Alignment Option 2 Both the environmental and engineering appraisal found the alignment options were largely comparable, with the key differentiating constraints for both appraisals centred on flooding and peat.

The environmental appraisal noted a marginal preference for Alignment Option 1 as it would cross habitats of lower ecological value and a shorter extent of Class 1 priority peatland. However, the habitat across both alignment options were noted to be typical of the wider landscape and with careful placement of poles could look to avoid the most sensitive habitats. The engineering appraisal noted a preference for Alignment Option 2 as it would avoid a watercourse crossing and would traverse a shorter extent of mapped flood plain.

The overall Optimal Alignment is considered to be Alignment Option 2. Site specific peat probing will be carried out to assess existing peat deposits and used to inform the final wood pole locations.

Figure 4.1 – Kirkton Grid Connection - Alignment Options

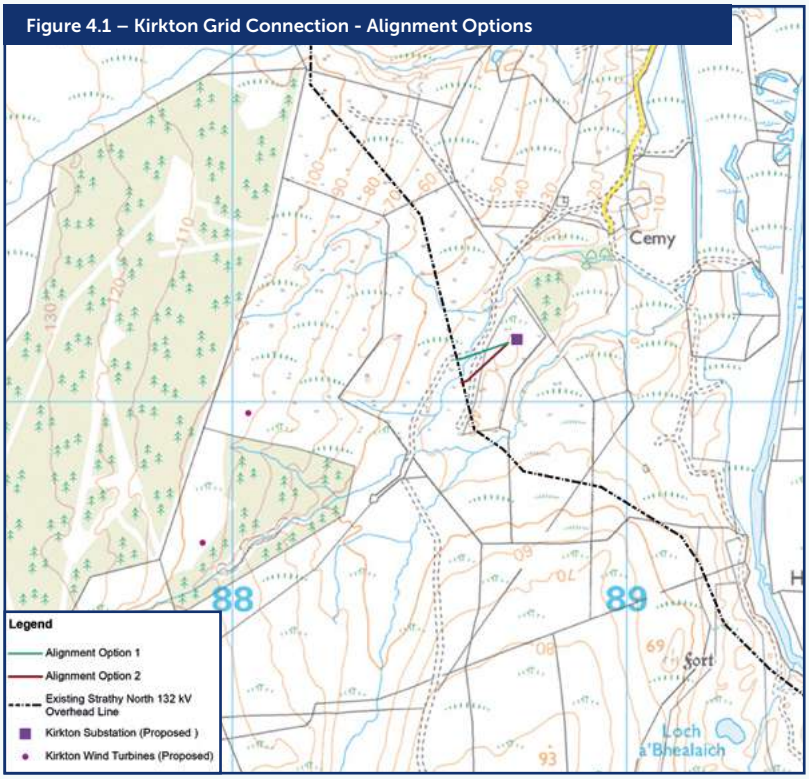
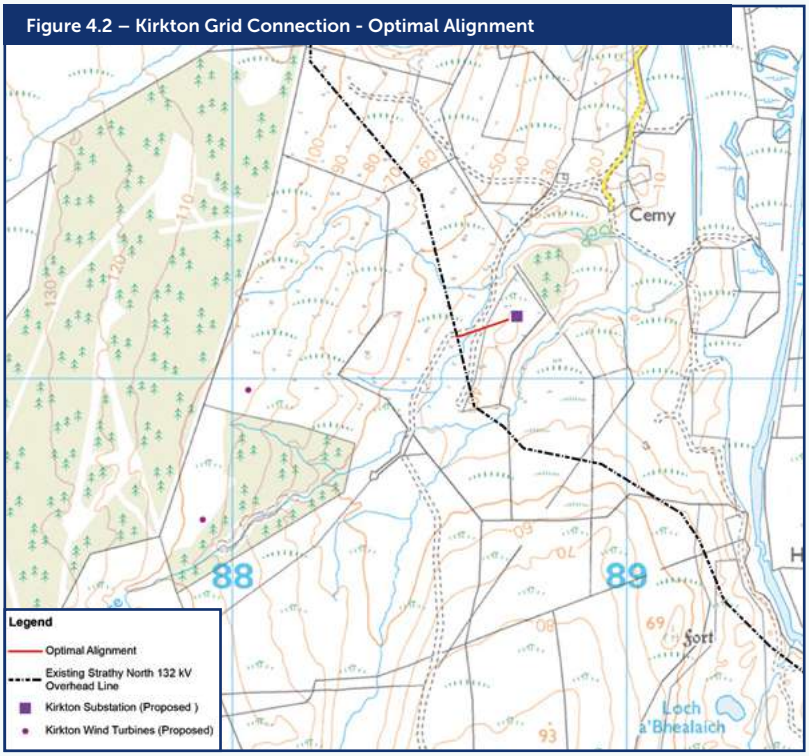


Figure 4.2 – Kirkton Grid Connection - Optimal Alignment



Melvich Wind Farm

The Melvich connection may be delivered via UGC or woodpole OHL or a combination of both and is still under engineering and environmental review.

This will be confirmed during a final round of consultation.

Switching station site selection

SSEN Transmission identified seven site options based on initial desk-based review and site visits within the Area of Search. Two site options (Site Options B and G) were discounted from further appraisal at an early stage on engineering grounds.

Table 1 displays the environmental and engineering appraisal RAG ratings for the site options considered. Taking the various constraints and site preferences into account, while Site Option D was the environmental preference due to its contained position limiting views from receptors to the north, from an engineering perspective this was a less preferred option.

The irregular shape and location of this option would lead to constraint in technology type, and it's contained position could lead to future expansion and connection restrictions.

In addition, it has a greater potential for flood risk due the proximity of a nearby watercourse.

The optimal engineering option was Site Option A due to its flat topography, minimal earthwork requirement and being located on the optimal side of the proposed Strathy North to Connagill 132kV OHL for ease of connection.

While environmental constraints were noted with Site Option A, in comparison to other site options, the environmental constraints were considered to comparable and not significant.

On balance it is therefore considered that Site Option A is the optimal site for Strathy Switching Station.

Figure 5.1 – Strathy Switching Station – Site Options

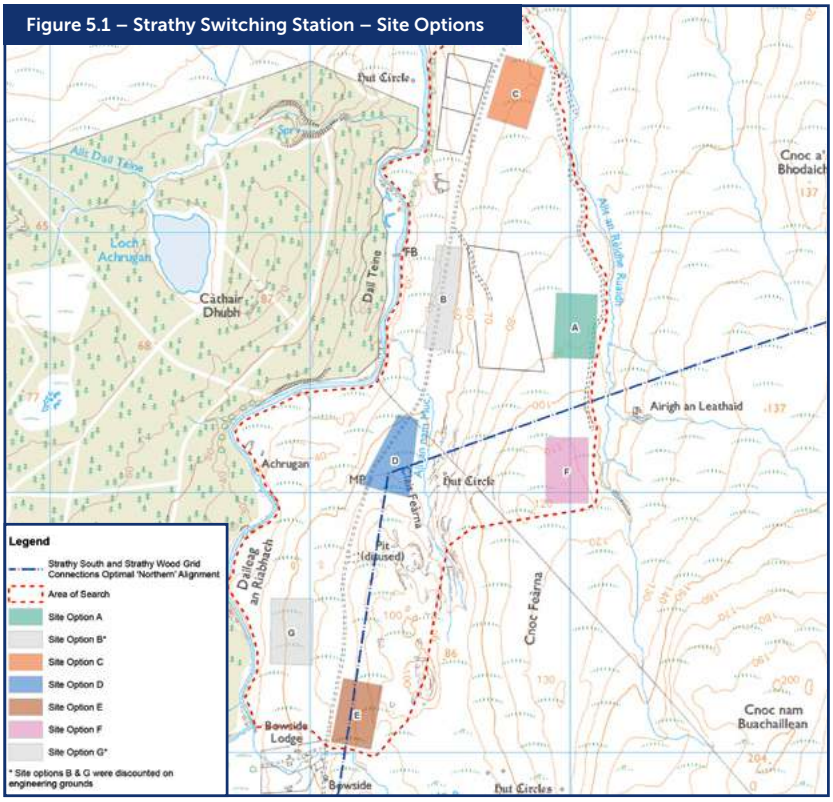
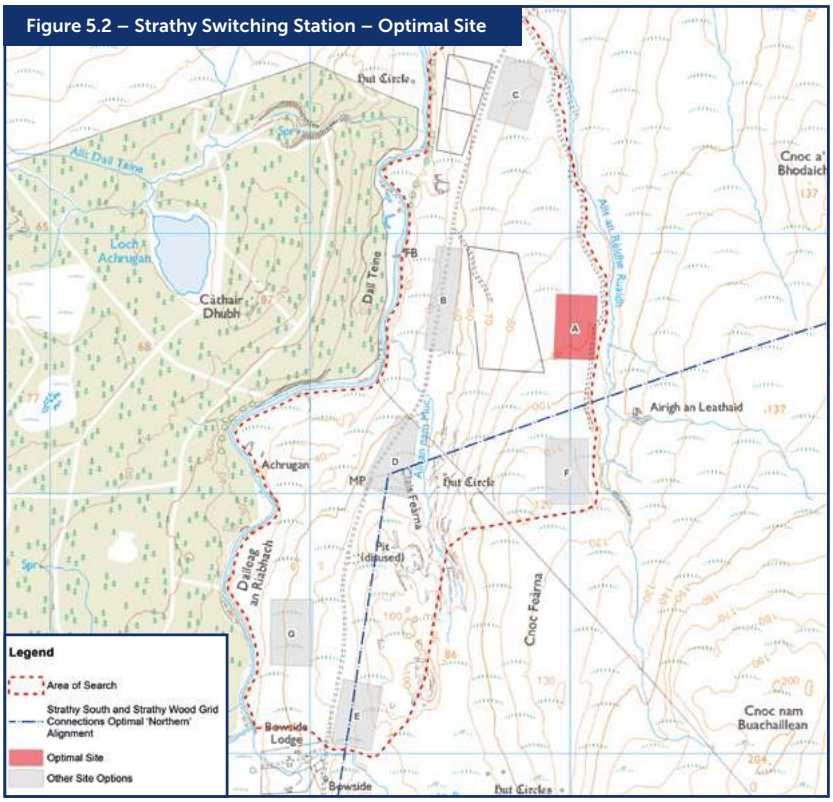


Figure 5.2 – Strathy Switching Station – Optimal Site



SSEN Transmission identified seven site options based on initial desk-based review and site visits within the Area of Search, as illustrated on **Figure 5.1**. However, two site options (Site Options B and G) were discounted from further appraisal at an early stage on engineering grounds. Table 1 displays the environmental and engineering appraisal RAG ratings for the site options considered.

Table 1: Strathy Switching Station – RAG Ratings

	Category	Sub-topic	A	C	D	E	F
Environmental	Natural Heritage	Designations					
		Protected Species					
		Habitats					
		Ornithology					
		Geology, Hydrology and Hydrogeology					
	Cultural Heritage	Designations					
		Cultural Heritage Assets					
	Landscape and Visual	Designations					
		Character					
		Visual					
	Land Use	Agriculture					
		Forestry					
		Recreation					
	Planning	Policy					
		Proposals					
Engineering	Connectivity	Existing circuits/networks					
		Future Development Possibilities					
		Interface with SSE Distribution and Generation					
		DNO Connection					
	Footprint requirements	Technology					
		Adjacent Land Use					
		Space Availability					
	Hazards	Existing Utilities					
	Ground Conditions	Topography					
		Geology					
	Environmental Conditions	Elevation					
		Salt Pollution					
		Flooding					
		Carbon Footprint					
		SF_6					
		Contaminated Land					
		Noise (proximity to dwellings/residential properties)					
	Construction Access	Substation Access Road (from public road)					
	Operation and Maintenance	Access					

Next steps

All comments on the alignment selection process are requested by 21 June 2024.

Following consultation events and a review of consultation responses, a Report on Consultation will be produced which will document the consultations received, and the decisions made in light of these responses to inform the selection of a proposed alignment for each section of the cluster.

Following the identification and confirmation of a proposed alignment, these will be taken forward into Stage 4: EA/EIA and Consenting, with the approach to consenting for each connection summarised in Table 3.1.

However, should further site and desk-based analysis at the EA/EIA and Consenting stage identify a particular constraint, a further review of the proposed alignments may be required.

Further consultation

As designs progress for Kirkton, Melvich and the switching station we will undertake further consultation and public exhibition in 2024 and we are currently targeting a third event in Autumn.

This will also provide an opportunity for us to present the results of any feedback from this event that we have been able to accommodate into our designs.

Alignments for Melvich and Kirkton wind farm connections will also be presented at the next event with an opportunity to provide feedback on these proposals.

Construction of an overhead wood pole line

A typical "H" wood pole installation requires foundations of approximately 2.5m by 3m across and to a depth of around 2 metres.

To minimise construction impact and the requirement for access tracks, helicopters are used wherever possible to help deliver the materials to the site.

The picture opposite shows a typical helicopter delivery of the steel work used on the top of a pole and the baulk timbers used in the foundation at the base of each structure. Helicopters are also used to assist with the stringing of the conductors.

Opposite is a typical example of an angle wood pole which requires additional stays. Note that stays are not usually required on non-angle poles unless ground or weather conditions dictate.

Construction of access tracks

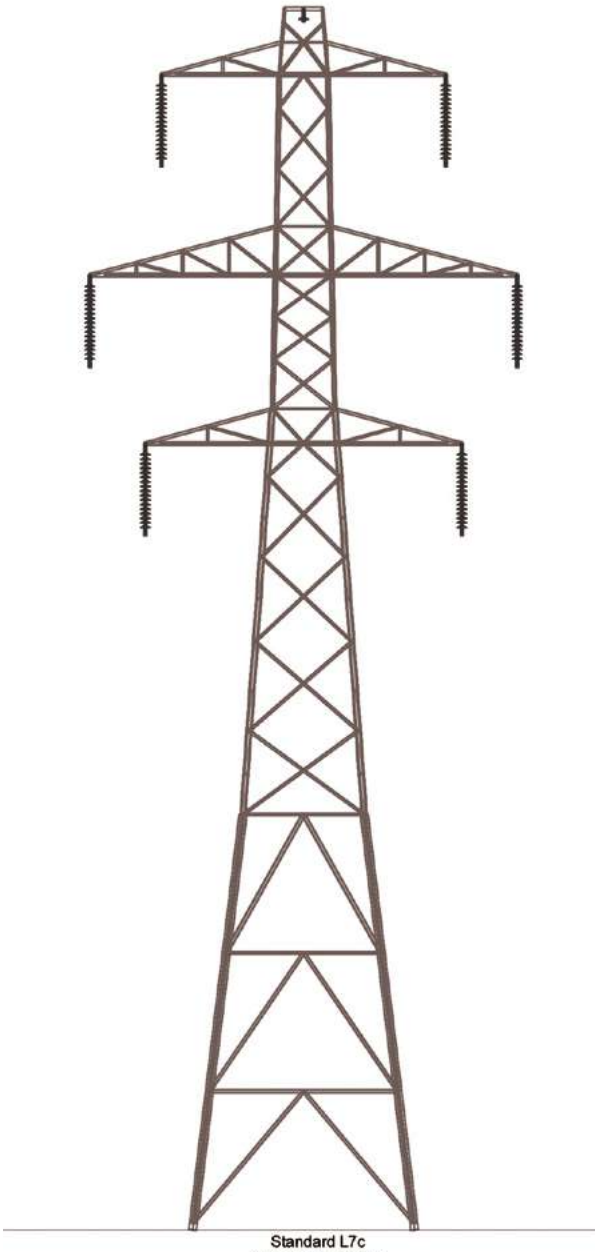
Access tracks will only be constructed where access by all-terrain vehicles or the use of trackway is not feasible.

Access tracks will be constructed with imported and/or locally sourced material.

Access tracks are not usually retained after construction of the overhead line. Permanent access may be required to terminal structures where an OHL meets a cable section.

Construction of a steel lattice tower

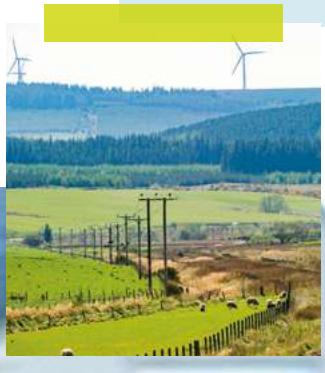
A steel lattice tower will have larger foundation requirements per structure (approximately 5x5m for 132kV, 7.5x7.5m for 275kV) than wood poles, however, they have a much longer span length between towers which provides opportunities to micro-site towers away from areas of sensitivity. Permanent access is typically required to facilitate safe operational and maintenance activities, particularly in more remote areas.



Standard L7c
Suspension Tower

Help shape our plans

The work we have planned is significant and has the potential to deliver massive benefits in your community, Scotland, and beyond. Yet we know that achieving our goals will require a lot of work that will impact your lives. That's why we want to work with you every step of the way throughout the planning and delivery stages of these essential and ambitious works.



We're committed to delivering a meaningful consultation process that actively seeks the views of everyone affected by our plans. That means making our plans clear and easily accessible, so that you can give us input throughout each stage of the development process.

Throughout the consultation, we'll present our approach to developing the project, including changes made since we last consulted with you.

We will also provide some visualisations and maps to show you where everything will be located.

We want you to share your thoughts and opinions on our plans, where you think we can make improvements, concerns about the impact of our work and what you think of any changes and refinements we've made.

By telling us what you think, you will help shape our proposals. We want to harness your local knowledge so that we spot any unforeseen challenges early and maximise the potential benefits and opportunities for your communities.

Because, ultimately, we want you to work with us to ensure that the energy infrastructure we build will be the best it can possibly be.

Who we are consulting with

As well as communities, we are keen to hear feedback from a broad range of other stakeholders including but not limited to landowners, businesses, non-statutory consultees and statutory consultees such as local authorities, NatureScot, Scottish Environment Protection Agency (SEPA), Historic Environment Scotland (HES) and Scottish Forestry (SF).

Have your say

We value community and stakeholder feedback. Without this, we would be unable to progress projects and reach a balanced proposal.

The feedback period

Previous consultation highlighted the need for an extended feedback period. In response to this, we will extend our usual 28 days feedback period.

We will accept feedback from now until 21 June 2024.

How to provide feedback

Submit your feedback online by scanning the QR code on this page or via the form on our project webpage at: ssen-transmission.co.uk/projects/project-map/connagill-cluster/

Email the feedback form to the Community Liaison Manager. Or write to us enclosing the feedback form at the back of this booklet.

What we're seeking views on

During our last public consultation event in November 2023, we wanted to know your thoughts on the routes under consideration and if you agreed with those we'd identified to take forward.

Now we want you to share your thoughts and opinions on our alignment plans and switching station location, where you think we can make improvements, concerns about the impact of our work and what you think of any changes and refinements we've made.

We'll be actively looking to mitigate the impacts of the project as much as possible over the coming months, but it would be helpful to understand what you believe we should be doing to help minimise these impacts and if there are any opportunities to deliver a local community benefit you would like us to consider.

We encourage all interested community members to fill in a feedback form when submitting feedback, however if you prefer, you can email us to provide your feedback or ask any questions.

Our Community Liaison Team

Each project has a dedicated Community Liaison Manager who works closely with community members to make sure they are well informed of our proposals and that their views, concerns, questions or suggestions are put to our project teams.

Throughout the life of our projects, you will hear from us regularly. We aim to establish strong working relationships by being accessible to key local stakeholders such as community councils, residents' associations and development trusts, and regularly engage with interested individuals.

Community Liaison Manager

Lisa Marchi-Grey
Community Liaison Manager

SSEN Transmission
10 Henderson Road,
Inverness, IV1 1SN

E: lisa.marchi@sse.com
T: +44 (0) 7825 015 507

Additional information

The best way to keep up to date is to sign up to project updates via the project webpage: ssen-transmission.co.uk/projects/project-map/connagill-cluster/

You can also follow us on social media

SSEN-Transmission

SSETransmission

To support everyone online, we provide accessibility and language options on our website through 'Recite Me'. The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar.

Your feedback

Strathy South to Strathy North

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS.

Q1. **Have we adequately explained the need for the Strathy South to Strathy North section of the cluster?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you have any other comments about the preferred alignment?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. Following a review of the provided information, how would you describe your understanding of the Connagill Cluster Project?

Comments:

Q6. Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection processes?

Comments:

Q7. Do you have any particular concerns or queries on the proposed connection from Strathy South to Strathy North?

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at **stakeholder.admin@sse.com** or by clicking on the unsubscribe link that will be at the end of each of our emails.

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If you would like to be kept informed of progress on the project please tick this box. ☐

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Post: SSEN Transmission, 10 Henderson Road, Inverness, IV1 1SN **Email:** lisa.marchi@sse.com
Online: ssen-transmission.co.uk/projects/project-map/connagill-cluster/
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We intend to use Artificial Intelligence (AI) to assist our experienced teams in the analysis of your feedback, so we can categorise key points raised more quickly. You can learn more about how we're utilising AI at **ssen-transmission.co.uk/AIFAQ**

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Your feedback

Strathy North to Connagill substation (including southern section and the northern section with the alternative route)

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS.

Q1. **Have we adequately explained the need for the Strathy North to Connagill substation (including southern section and the northern section with the alternative route).**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you have any other comments about the preferred alignment?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. **Following a review of the provided information, how would you describe your understanding of the Connagill Cluster Project?**

Comments:

Q6. **Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection processes?**

Comments:

Q7. **Do you have any particular concerns or queries on the proposed connection from Strathy North to Connagill Substation?**

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

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Your feedback

Armadale Wind Farm Connection

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS.

Q1. **Have we adequately explained the need for the Armadale Wind Farm connection project?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you have any other comments about the preferred alignment?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. **Following a review of the provided information, how would you describe your understanding of the Connagill Cluster Project?**

Comments:

Q6. **Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection processes?**

Comments:

Q7. **Do you have any particular concerns or queries on the proposed connection for Armadale Wind Farm?**

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

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Your feedback

Melvich and Kirkton Wind Farms

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS.

Q1. **Have we adequately explained the need for the Melvich and Kirkton Wind Farms connection project?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you have any other comments about the preferred alignment?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. **Following a review of the provided information, how would you describe your understanding of the Connagill Cluster Project?**

Comments:

Q6. **Are there any factors, or environmental features, that you consider may have been overlooked during the optimal route selection processes?**

Comments:

Q7. **Do you have any particular concerns or queries on the proposed connection for the Melvich and Kirkton Wind Farms?**

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

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Your feedback

Switching Station

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS.

Q1. **Have we adequately explained the need for the Switching Station as part of the connection project?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. **Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. **Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q4. **Do you have any other comments about the preferred station location?**

☐ Yes ☐ No ☐ Unsure

Comments:

Q5. **Following a review of the provided information, how would you describe your understanding of the Connagill Cluster Project?**

Comments:

Q6. **Are there any factors, or environmental features, that you consider may have been overlooked during the site selection processes?**

Comments:

Q7. **Do you have any particular concerns or queries on the proposed location for the Switching Station?**

☐ Yes ☐ No ☐ Unsure

Comments:

Full name

Address

Telephone

Email

If you would like your comments to remain anonymous please tick this box. ☐

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at **stakeholder.admin@sse.com** or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at **ssen-transmission.co.uk/privacy**

If you would like to be kept informed of progress on the project please tick this box. ☐

Thank you for taking the time to complete this feedback form. Please submit your completed form by one of the methods below:
Post: SSEN Transmission, 10 Henderson Road, Inverness, IV1 1SN **Email:** lisa.marchi@sse.com
Online: ssen-transmission.co.uk/projects/project-map/connagill-cluster/
Download: Comments forms and all the information from today's event will also be available to download from the project website.

The feedback form and all information provided in this booklet can also be downloaded from the dedicated website:
ssen-transmission.co.uk/projects/project-map/connagill-cluster/

We intend to use Artificial Intelligence (AI) to assist our experienced teams in the analysis of your feedback, so we can categorise key points raised more quickly. You can learn more about how we're utilising AI at **ssen-transmission.co.uk/AIFAQ**

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.

ANNEX H – SUMMARY OF ROUTE STAGE CONSULTATION FEEDBACK FROM STATUTORY & NON-STATUTORY CONSULTEES – APRIL 2024

Annex H: Statutory and Non-Statutory Consultee Feedback on Connagill Cluster Grid Connections (Strathy South and Strathy Wood Connections – Southern Section) – April 2024

Stakeholder	Summary of Feedback	Response by SSEN Transmission
Statutory Consultees		
The Highland Council (THC)	**Strathy South and Strathy Wood Grid Connections – Southern Section**	
	The preferred route options appear to have not changed significantly from those presented at the Major Pre-application Meeting on 22 August 2023. As such, THC have no further comments.	This has been noted.
NatureScot (NS)	NS are satisfied that the need for the Projects has been adequately explained, sufficient information has been provided to enable an understating as to what is being proposed and why; and NS are satisfied that the approach taken has been adequately explained.	These comments are welcomed.
	NS provided links to advice on the NS website: 'Advising on peatland, carbon rich soils and priority peatland habitats in development management' and 'Enhancing biodiversity'.	This comment is acknowledged.
	Caithness and Sutherland Peatlands SAC: The most likely habitats to be affected of the SAC are wet heathland with cross-leaved heath and blanket bog. There are several options for the Strathy South and Strathy Wood Grid Connection – Southern Section, with one avoiding the SAC (Route Option SS-SN3) and the others all within it. NS advises that any disturbance should take place outside the SAC to maintain the SAC Conservation Objectives. A proposed OHL through the SAC would be very challenging and NS would encourage alternative routes.	While SSEN Transmission acknowledge the environmental benefits of Route Option 3; technically, this route option would be very challenging to construct as it passes through Strathy North wind farm. If constructed as an OHL, this route would fall within the wind wake effect of the wind turbines and would not meet the required spacing between wind turbines and the OHL and, therefore, undergrounding Route Option SS-SN3 would be required. To support an UGC here, two double-circuit cable sealing end (CSE) compounds would be required at either end of the cable to convert to OHL. The compounds would include a stone hard-standing platform with a permitter palisade security fence, allowing the UGC to transition and connect to an overhead steel tower. The estimated footprint of these compounds is approximately 70 m x 70 m and they would also require permanent access tracks for operations and maintenance. These additional infrastructure elements would likely increase the potential environmental impacts of this option. The construction of an UGC through an operational wind farm would be very challenging due to the need to avoid interface with existing wind turbine UGC that

		would require adequate clearance to provide the required width of the working construction corridor. Similarly, future access for maintenance and operations would require third party permission through the wind farm to access and carry out works. From a technical and safety perspective, this route option is therefore not considered to be viable. Route Options SS-SN 2a and 2b have reduced presence within the natural heritage designations compared with other route options, and they both offer opportunities at alignment stage to avoid adverse effects on the qualifying habitats of the Caithness and Sutherland SAC by selecting an alignment which closely follows the existing access track and associated disturbed land adjacent to the track. Further discussion will be undertaken with NatureScot during the alignment selection stage of the project on the opportunities to minimise potential impacts on the SAC.
	NS require further information to be able to comment with regards to National Planning Framework (NPF)4: • Habitat (NVC) survey maps identifying areas/features mentioned in Annex 1 of NS guidance document. • Construction management plan detailing how construction methods will minimise impacts on peatland including direct disturbance and changes in hydrology. This should also include information on how maintenance and fault resolution will likely impact on the habitat. • Peat management plan. • Habitat management plan.	National Vegetation Classification (NVC) surveys have been carried out across the optimal routes and will be used to inform the alignment optioneering stage for each connection. The section 37 submissions for each grid connection will include further details on construction methodologies, a Peat Management Plan and a Habitat Management Plan.
	Caithness and Sutherland Peatlands SPA: Consideration must be given to SPA species so that conservation objectives of the site can be maintained. The proposals are likely to disturb and possibly displace SPA species through construction activity. There may also be significant effects on other species which would have to avoid OHLs whist flying to and from the sea to feed during the breeding season.	Ornithology surveys have been carried out across the cluster between October 2018 and August 2023 comprising flight surveys, moorland breeding bird surveys, scarce bird surveys, raptor surveys, black-throated diver focal watches and breeding diver surveys. In addition, a range of bird surveys have been completed for other existing, consented and proposed developments in the area, and the survey areas for some of these partially overlap the grid connections. These datasets will be used to inform an understanding of the baseline environment and will inform the alignment optioneering stage for each connection.

		Further consideration of the potential for impacts to the qualifying species of the Caithness and Sutherland Peatlands SPA species will be undertaken as the project progresses.
	The proposed and consented wind farms which are to be connected by this project will provide useful information with respect to SPA species distribution and movement and recommend they are consulted.	SSEN Transmission has approached the wind farm developers connected to the Connagill Cluster grid connection projects to request bird data collected to inform the alignment selection and EIA stages. Some of these datasets have been shared and will be drawn upon to inform the ornithological impact assessment, to support future applications of consent.
	<u>Proposed Flow Country World Heritage Site (WHS):</u> The proposed connections lie within and adjacent to the proposed WHS. As the proposals lie within Class 1 and Class 2 peatland habitats, we advise that: • The projects may result in loss of blanket bog and wet heath habitat within the proposed WHS. • The projects may result in impacts on the population and distribution of birds within the proposed WHS without mitigation. THC has produced a toolkit for developers to use to assess impacts to the WHS along with a Planning Position Statement.	Comment acknowledged. Peat depth probing and NVC habitat surveys have been undertaken and will be used to inform alignment selection and to minimise impacts on priority peatland habitats as far as possible. SSEN Transmission has received a copy of the Draft Flow Country Toolkit template from THC. This will be used to assess the impacts on the WHS and will be reported in each section 37 submission documentation.
	NS advise that NVC habitat survey within the projects route corridors will provide a greater understanding of likely impacts with respect to the WHS.	Comment acknowledged. NVC habitat surveys have been undertaken and the data will be drawn upon to inform alignment optioneering. Upon confirmation of a proposed alignment, should further survey work be required to inform the impact assessment, this will be undertaken.
Historic Environment Scotland (HES)	HES consider that the consultation document adequately sets out the need for the project and that there is sufficient information to understand what is being proposed and why.	These comments are welcomed.
	HES are content that the methodology used to appraise the routes for the OHL is adequately explained, however, more detailed assessment of impacts on the historic environment will be required to gain a clear understanding of the potential level of those impacts.	These comments are acknowledged.
	Strathy South and Strathy Wood 'Southern Section'	

	HES are content that the Preferred route options considered within the Consultation Document would not raise significant impacts for their interests.	Comments are welcomed and agreement with optimal route options is noted.
Scottish Environment Protection Agency (SEPA)	SEPA state that they have considered the Consultation Document and supporting information and have no site-specific comments. However, they are interested in the location of the proposed infrastructure within the proposed route corridors.	This has been noted and SEPA will be consulted further as the project progresses through alignment optioneering.
	SEPA refer to their pre-application response, dated August 2023, which is summarised below:	
	SEPA noted that as much of the site is likely to be peatland and/or wetland, NVC survey and peatland condition mapping should be carried out.	NVC and peat depth surveys have been carried out across the connections and results will be shared with SEPA during the alignment selection stage of the project to discuss opportunities to minimise potential impacts on peatland and/or wetland.
	To protect peatland and limit carbon emissions from carbon rich soils, the submission should demonstrate that: • Proposals avoid peatland in near neutral condition. • Minimise the total area and volume of peat disturbance. • Clearly demonstrate how the infrastructure layout design has targeted areas where carbon rich soils are absent or the shallowest peat reasonably practicable and avoidance of peat >1 m depth. • Minimise impact on local hydrology. • Include adequate peat probing information to inform the site layout. As a minimum this should follow the requirements of the peatland survey – guidance on development on peatland (2017).	This has been noted and detail will be provided in support of future applications for consent.
	SEPA outline that the planning submission must be supported by a comprehensive site-specific Peat Management Plan (PMP) and Habitat Management Plan (HMP) including: • Proposals for re-use of disturbed peat in habitat restoration. • Details of restoration to compensate for the area of peatland habitat directly and indirectly impacted by the development. • Proposals for peatland enhancement in other areas. • Monitoring proposals.	Further consideration of potential impacts on peatland habitats will be undertaken as the project progresses. This will include a peat probing campaign, and the preparation of a Stage 1 Peat Management Plan, Peat Landslide Hazard and Risk Assessment and Habitat Management Plan, to support future applications of consent.

	Provided watercourse crossings are designed to accommodate 1 in 200 year flood event plus climate change and other infrastructure is located well away from watercourses, SEPA do not foresee, from current information, a need for detailed information on flood risk.	This has been noted.
	SEPA stated that where proposals are on peatland or carbon rich soils the following should be submitted to address the requirements of NPF4 Policy 5: a) Layout plans showing all permanent and temporary infrastructure, with extent of excavation required, which clearly demonstrates how the mitigation hierarchy outlined in NPF4 has been applied. These plans should be overlaid on: • Peat depth survey (showing peat probe locations, colour coded using distinct colours for each depth category and annotated at a useable scale) • Peat depth survey showing interpolated peat depths • Peatland condition mapping • NVC survey mapping b) An Outline PMP. This plan should include: • Information on peatland condition • Information demonstrating avoidance and minimisation of peat disturbance. • Excavation volumes of acrotelmic, catotelmic and amorphous peat. These should include a contingency factor to consider the variable such as bulking and uncertainties in the estimation of peat volumes. • Proposals for temporary storage and handling. • Reuse volumes in different elements of site reinstatement and restoration. c) An Outline HMP. This plan should include: • Proposals for reuse of disturbed peat in habitat restoration, if relevant. • Details of restoration to compensate for the area of peatland habitat directly and indirectly impacted by the development. • Outline proposals for peatland enhancement in other areas of the site. • Monitoring proposals.	Further consideration of potential impacts on peatland habitats will be undertaken as the project progresses. This will include a peat probing campaign, and the preparation of a Stage 1 Peat Management Plan, Peat Landslide Hazard and Risk Assessment and Habitat Management Plan, to support future applications of consent.

Transport Scotland (TS)	Having reviewed the preferred route options for each connection, given the distance from the A9 trunk road (28 km west of Connagill substation), Transport Scotland has no particular concerns or queries on the proposed grid connection projects or any comment to make on the optimal routes.	This has been noted.
Non-Statutory Consultees		
RSPB Scotland	All grid connections are located within the sensitive Flow Country landscape, where there are a number of other operational, consented and in-planning wind farms. RSPB stated concerns about the increasing cumulative impacts on some of the qualifying features of the adjacent designated European sites.	This has been noted. Further work to consider the potential for cumulative impact on the qualifying features of the designated sites will be completed during the EIA stage of the projects to determine the potential for likely significant effects and inform appropriate mitigation measures.
	Due to the location, large scale and timeline of the project, there is significant scope for adverse impacts on habitats and species. Robust survey and assessment should be undertaken to inform the final design to avoid or minimise impacts where possible, as per the mitigation hierarchy.	Ornithology surveys have been carried out across the cluster between October 2018 and August 2023. Additionally, a range of bird surveys have been completed for other existing, consented and proposed developments in the area. As such, extensive and robust datasets are available to inform the ornithological and ecological impact assessments. Further work to consider potential for impacts on habitats and protected species will continue through the design and EIA stages of the project to determine the potential for likely significant effects and inform appropriate mitigation measures.
	RSPB agree in consolidating the routeing for these grid connections as it is likely to reduce environmental impacts, however we have objected or expressed concern about all of the wind farms that require this grid connection primarily due to impacts on the qualifying features of the Caithness and Sutherland Peatlands Special Protection Area (SPA) and other species of high conservation concern.	This has been noted.
	Bird Species of Conservation Concern and Designated Sites There are a number of nature designations within the proposed corridor. Many proposed routes pass through the Caithness and Sutherland Peatlands SPA, SAC and Ramsar site, as well as the Flow Country Candidate World Heritage Site (WHS). Some routes also pass through or are within connectivity distance to the West Halladale SSSI, East Halladale SSSI, North Caithness Cliffs SPA and the Armadale Gorge SSSI. These sites are designated for their internationally and nationally important populations of birds and habitats. The development has the potential to impact a number of the qualifying features of the designated sites. Negative impacts to birds	This has been noted. Further consideration of potential impacts on the qualifying interests of the designated sites will be undertaken as the project progresses, to support future applications of consent.

	associated with construction and operation of OHLs are collision, electrocution, displacement, habitat loss and disturbance, all of which must be considered.	
	Survey and assessment requirements Due to the importance of the bird species and habitats present along the routes and the location of designated sites that this proposal passes through or close to, RSPB Scotland recommend undertaking two years of field surveys (vantage point, breeding bird and wintering bird). This will be needed to provide up-to-date information on bird distribution and activity to assess likely effects and inform any required mitigation. RSPB Scotland and the Highland Raptor Study Group should be contacted as soon as possible for relevant bird records.	Ornithology surveys have been carried out between October 2018 and August 2023 across the cluster, comprising flight activity surveys, moorland breeding bird surveys, scarce breeding bird surveys, raptor surveys, black throated-diver focal watches and breeding diver surveys based on the optimal route at the time and included surrounding areas with survey specific buffers (500 m for breeding birds, 1.5 km for breeding divers and 2 km for scarce breeding birds). A range of bird surveys have also been carried out for other existing, consented and proposed developments in the area and the survey areas for some of these partially overlap the various grid connection routes and will be drawn upon where possible. Consultation took place with NatureScot in December 2021 regarding the Strathy South Grid Connection, when it was confirmed that sufficient existing survey work related to the wind farms and associated grid connections give a reliable baseline for assessing the proposal and no extra fieldwork is required. A detailed review of available recent and historical ornithology survey data from all relevant developments will be completed as part of a desk-based study used to inform the ornithological impact assessment, to support future applications of consent. Relevant data will also be requested from relevant organisations such as RSPB Scotland and the Highland Raptor Study Group (HRSG) as part of the desk-based study.
	RSPB Scotland recommend that ornithological survey data should be requested from each of the consented and proposed wind farms (linked to this grid connection project). Peat depth and habitat surveys should also be undertaken along the preferred route in order to inform the final alignment deviation choices.	SSEN Transmission has approached the wind farm developers for which these grid connections are linked and has received some data. These datasets will be drawn upon to inform the ornithological impact assessment. Habitat surveys and a peat probing campaign have been undertaken and will be used to inform the design as the project progresses and to support future applications of consent.
	Caithness and Sutherland Peatlands SPA Appropriate surveys should be conducted for all of the Caithness and Sutherland SPA qualifying species: Red-throated Diver, Black-throated Diver, Hen Harrier, Golden Eagle, Merlin, Golden Plover, Wood Sandpiper, Short-eared Owl, Dunlin, Common Scoter, Greenshank and Wigeon in line with to NatureScot guidance. Both East and	Ornithology surveys have been carried out between October 2018 and August 2023 across the cluster comprising flight activity surveys, moorland breeding bird surveys, scarce breeding bird surveys, raptor surveys, black throated-diver focal watches and breeding diver surveys. These were based on the optimal route at the time and

	West Halladale SSSIs are also designated for these breeding species. Surveys should allow for analysis of negative impacts associated with both construction and operation of OHLs, including collision, displacement, habitat loss and disturbance.	included surrounding areas with survey specific buffers (500 m for breeding birds, 1.5 km for breeding divers and 2 km for scarce breeding birds). Data collected will be used to inform the ornithological impact assessment, to support future applications of consent.
	North Caithness Cliffs SPA Peregrine, as a qualifying species of the North Caithness Cliffs SPA, must be considered as the Strathy South and Strathy Wood 'Northern Section' Grid Connection may be within foraging distance of (as they have a core range of 2 km, but ranges of up to 18 km has been recorded).	It is noted that the Strathy South and Strathy Wood 'Northern Alternative' Grid Connection lies within 2 km of the North Caithness Cliffs SPA, which is the core forging range of breeding peregrine (a designated feature of the SPA). As such this SPA will be considered in the shadow Habitat Regulations Appraisal process. However, no records of breeding peregrine have been identified within 2 km and recorded levels of flight activity during surveys completed have been low.
	Armadale Gorge SSSI Armadale Gorge SSSI is designated for scrub woodland and dry heath. On the ground habitat surveys are required to determine the location of qualifying habitats. RSPB Scotland has historic records of Merlin using this site and ornithological surveys will be required to determine the current bird use. RSPB also suggest contacting the Highland Raptor Study Group to request up-to-date records.	Habitat surveys have been undertaken and will be drawn upon to inform alignment optioneering through the SSSI with the aim of locating infrastructure within non-qualifying habitats of the SSSI, where possible. Bird surveys have been carried out in this area between 2021-2022 and included vantage point surveys (at locations agreed with NatureScot in February 2022), breeding diver surveys, breeding raptor surveys and upland moorland breeding bird surveys, all complete in accordance with specific-species methodologies. Substantial pre-existing baseline bird data also exists from surveys completed for developments that are either operational, consented or proposed in the wider area, and it is intended to draw upon this pre-existing collated data to inform to inform alignment optioneering and future ornithological impact assessments. Additionally, relevant data will be requested from relevant organisations such as RSPB Scotland and the HRSG as part of the desk-based study.
	Wider-countryside ornithological requirements RPSB Scotland have records of White-tailed Eagle (*Haliaeetus albicilla*) and Curlew (*Numenius arquata*) within the Corridor and should be included in any surveys. Data gathered in relation to Kirkton Energy Park includes Curlew data. The impact of the grid connections should be considered for both species. Data from Kirkton Energy Park also suggests that Greylag Geese, Pink-footed Geese and Whooper Swan transit the site. These species should also be considered in surveys.	SSEN Transmission has approached the wind farm developers connected to the Connagill Cluster grid connection projects to request bird data collected for each wind farm EIA. Some of these datasets have been shared and will be drawn upon to inform the ornithological impact assessment, to support future applications of consent. Additionally, relevant data will be requested from relevant organisations such as RSPB Scotland and the HRSG as part of the desk-based study.

	Peatland Many of the route options pass through significant areas of Class 1 deep peat according to the SNH Carbon and Peatland Map 2016. A peat depth survey should be undertaken in order to minimise impacts on peat by helping to avoid areas deeper than 0.5 m. Routes that use existing infrastructure should also be considered as a way of reducing further damage to peat.	Further consideration of potential impacts on peatland habitats will be undertaken as the project progresses. This will include a peat probing campaign, and the preparation of a Stage 1 Peat Management Plan, Peat Landslide Hazard and Risk Assessment and Habitat Management Plan, to support future applications of consent.
	Horizontal directional drilling through bedrock should be considered for sensitive peatland habitats that cannot be avoided.	Horizontal directional drilling (HDD) would be technically very challenging to undertake and would require a large laydown and construction compound at either of the HDD section(s) that could require large areas of peat in these areas to be cleared or disturbed. HDD has limits to its length and is typically best suited to narrow very sensitive constraints as opposed to large expansive habitats.
	Cumulative Assessment The impacts of this proposal should be assessed in combination with other proposed and consented developments within the area. The assessment should include the existing Strathy North OHL (as it may be retained as the grid connection to the Melvich and Kirkton wind farms) and any existing 33 kV and 11 kV distribution network infrastructure particularly in relation to collision risk to Red- and Black-throated Divers, Common Scoter and Hen Harriers, noting that Common Scoters are likely to fly at night. The cumulative disturbance and displacement impact on birds from the increase in traffic and noise from the additional use of existing wind farm access tracks during construction and maintenance of this grid connection project should also be included. Any identified impacts should be assessed against the relevant SPAs and NHZ populations.	The ornithological impact assessment will consider potential direct, indirect and cumulative effects that the construction and operation of the proposed grid connections could have on identified important ornithological features.
	World Heritage Site The Highland Council's Flow Country Candidate WHS Planning Position Statement (April 2023) states that developments within the zone of influence of the WHS, must be assessed utilising the UNESCO Impact Assessment Guidance Toolkit. Therefore, we recommend that this is undertaken alongside the EIA.	SSEN Transmission has received a copy of the Draft Flow Country Toolkit template from THC. This will be used to assess the impacts on the WHS and will be reported in each section 37 submission documentation.
	Biodiversity Net Gain (BNG) / Biodiversity Enhancement	This has been noted.

	RSPB Scotland welcomes the requirement in Policy 3 of NPF4 that all developments must deliver biodiversity enhancement. The proposal therefore needs to offer 'significant biodiversity enhancements' that can be 'secured within a reasonable timescale and with reasonable certainty'. We are pleased to read of SSEN Transmission's Biodiversity Ambition. Any plans need to clearly set out what elements are proposed as mitigation and/or compensation and what is considered enhancement.	
	Compensatory Planting We understand that compensatory planting may be required as a result of the development. Much of the proposed felling area is on deep peat. RSPB Scotland would request the Applicant considers whether compensatory planting is required in these areas in this instance or whether an exception would apply as per Scottish Forestry guidance regarding removal of woodland from deep peat. The Applicant should seek guidance on this and consider peatland restoration instead as this would maximise any biodiversity enhancement.	This has been noted and will be considered.
	Strathy South and Strathy Wood Grid Connections – Southern Section	
	We note that a 132 kV underground cable connection is proposed from Strathy South wind farm substation to a point in the vicinity of Strathy Wood wind farm substation. Since this route cannot avoid designated sites, Horizontal Directional Drilling should be seriously considered for the proposed undergrounding to avoid direct impacts on SAC qualifying habitats from laying cables in dug trenches.	Horizontal directional drilling (HDD) would be technically very challenging to undertake and would require a large laydown and construction compound at either of the HDD section(s) that could require large areas of peat in these areas to be cleared or disturbed. HDD has limits to its length and is typically best suited to narrow very sensitive constraints as opposed to large expansive habitats.
	RSPB Scotland agrees that that Route Option 3 is likely to be the least damaging option on environmental grounds due to it crossing the designated sites for the shortest length. It also passes through existing commercial forestry or non-designated open land east of the existing Strathy North wind farm. From the information available at this stage, this would be RSPB Scotland's preferred route, as it would avoid the designated sites for nature.	While SSEN Transmission acknowledge the environmental benefits of Route Option 3; technically, this route option would be very challenging to construct as it passes through Strathy North wind farm. If constructed as an OHL, this route would fall within the wind wake effect of the wind turbines and would not meet the required spacing between wind turbines and the OHL and, therefore undergrounding Route Option SS-SN3 would be required. To support an UGC here, two double-circuit cable sealing end (CSE) compounds would be required at either end of the cable to convert to OHL. The compounds would include a stone hard-standing platform with a permitter palisade security fence, allowing the UGC to transition and connect to an overhead steel tower. The estimated footprint of these compounds is approximately 70 m x 70 m and they
	We note, however, that a combination of Route Options 1, 2a and 2b are preferred over Route Option 3. This is concerning as the route will run through the Caithness and Sutherland Peatlands SPA, SAC and Ramsar site, when an option west of the river could avoid this. It would also run adjacent to two existing overhead lines. RSPB	

	Scotland stated that the mitigation hierarchy must be followed and strongly suggest that Route Option 3 is further considered as the preferred route option, or Horizontal Directional Drilling used so that loss of qualifying habitats is avoided.	would also require permanent access tracks for operations and maintenance. These additional infrastructure elements would likely increase the potential environmental impacts of this option. The construction of an UGC through an operational wind farm would be very challenging due to the need to avoid interface with existing wind turbine UGC that would require adequate clearance to provide the required width of the working construction corridor. Similarly, future access for maintenance and operations would require third party permission through the wind farm to access and carry out works. From a technical and safety perspective, this route option is therefore not considered to be viable. Route Options 2a and 2b have reduced presence within the natural heritage designations compared with other route options, and they both offer opportunities at alignment stage to avoid adverse effects on the qualifying habitats of the Caithness and Sutherland SAC by selecting an alignment which closely follows the existing access track and associated disturbed land adjacent to the track.
	The preferred option appears to be very similar to the Strathy Wood Grid Connection that was consulted on at the scoping stage in 2020 (ECU reference ECU00002050). RSPB Scotland responded to this consultation at the time. Bird surveys that were undertaken between 2018 and 2019 for this route option are now on the cusp of expiring so we would recommend that new surveys are undertaken as outlined above.	While this comment is acknowledged, given the extent of existing survey work collated for the cluster of grid connections, along with survey work related to the wind farms and other associated grid connections, a reliable baseline of data has been gathered to inform an ornithological impact assessment and therefore, SSEN Transmission do not intend to carry out any further fieldwork.

ANNEX I – SUMMARY OF ROUTE STAGE CONSULTATION FEEDBACK FROM LOCAL COMMUNITY & GENERAL PUBLIC – APRIL 2024

Annex I: Public and Local Community Feedback by Topic – Route Stage Consultation – April 2024

Stakeholder	Summary of Feedback	Response by SSEN Transmission
Resident	Concerns about the potential detrimental impact of pylons on the 'fragile' community.	The comment is noted. Further environmental and engineering studies will be undertaken at alignment selection stage to seek to find an acceptable alignment together with appropriate mitigation. This will include detailed input by the project landscape architect. Visualisations will be produced from key viewpoint locations to demonstrate the likely effects of the proposals.
Resident	Queried why no information was provided on alternative options such as buried cables.	Consideration has been given to the potential use of underground cable in areas more constraining to OHL, such as in the vicinity of proposed or consented wind turbines or areas where sensitive bird species are known to be present. This has been considered for the route options presented in the Consultation Document.
Resident	Concerns raised that the existing proposed wind farms will severely impact the area and the addition of pylons will further denigrate the local environment.	Further environmental and engineering studies will be undertaken at alignment selection stage to seek to find an acceptable alignment together with appropriate mitigation to minimise impacts on the environment. As part of the EIA an appraisal of cumulative effects will be considered in relation to topics scoped into the EIA.
Resident	Queried what community benefit will be provided.	Under current licence obligations, SSEN Transmission are unable to provide community benefit. Community benefit is realised by enabling the connection of the wind farm(s) which may privately be able to offer local benefit.
Resident	More detail was requested on the sizing of the steel lattice towers and predicted noise levels.	Tower heights would vary depending on local topography but would typically be between 28 and 46 m in height. Exact heights of and distances between towers would be determined after a detailed line survey. During the detailed design stage of the project, proximity to residential properties will be taken into consideration and should operational noise effects be anticipated, an operational noise assessment will be included in the EIA.
Resident	More detail was requested on the conductivity of wet peat being an inferior transmitter to soil.	When an UGC is installed, the peat is typically moist and it conducts thermally and electrically, however, when cables are in operation mode they dissipate / radiate heat and create an isotherm of approximately 50'C which dries the soil/peat. Dried-out peat can have air voids and has poor thermal conductivity properties. When the peat is

Stakeholder	Summary of Feedback	Response by SSEN Transmission
		dried out the thermal resistivity exceeds our required limit.
Resident	Concerns that cost is the driver for the approach to rationalisation rather than community and landscape.	The assessment undertaken follows SSEN Transmission's internal guidance which looks to identify the least constrained option based on a number of environmental, technical and cost issues. Studies identified that separate grid connections would not be the optimal solution from a technical or environmental perspective, particularly where all connections would converge within the vicinity of Connagill substation; and this was the main driver to investigating a rationalised approach across the five connections.
Resident	In response to whether any potential environmental factors may have been overlooked, concerns were raised regarding salmon migratory routes and annual swan and geese migration.	Bird surveys have been carried out between October 2018 and August 2023 across the cluster, which have included surveys for wader species (i.e. swans and geese). A range of bird surveys have also been carried out for other existing, consented and proposed developments in the area, and the survey areas for some of these partially overlap the various grid connection routes and will be drawn upon, where possible, to inform alignment optioneering and future ornithological impact assessments. Consultation and data requests will be conducted with the Northern District Salmon Fisheries Board and Flow Country Rivers Trust as the project progresses. However, it is anticipated that at detailed design stage, a sufficient buffer will be maintained between construction works and watercourses, and with adherence to SSEN Transmissions General Environmental Management Plans (GEMPs), the risk of pollution to the surrounding watercourse would be minimised and direct and indirect effects on aquatic species, including fish species, would be avoided during construction.
Resident	Concerns around the materials required for the construction of infrastructure, including tonnes of concrete; with production and transport an anachronism in the pursuit of green energy.	This comment is acknowledged. Further environmental and engineering studies will be undertaken at the detailed design stage to seek to find an acceptable design that would minimise impacts on the environment.
Resident	Concerns on the heritage, conservancy, wildlife and culture/traditions of the Highlands, which is being targeted by development due to the sparse population.	This comment is acknowledged. Further environmental and engineering studies will be undertaken at the detailed design stage to seek to find an acceptable design that would minimise impacts on the environment.