

## **APPENDIX 4: CREAG DHUBH TO INVERARAY 275 KV OHL CONSULTATION BOARD JULY 2021**



# Creag Dhubh - Inveraray 275kV Overhead Line

## 1. About the project

### Project Need

SSEN Transmission has seen a significant increase in generator connection applications in Argyll and Kintyre, with over 600MW total generation having applied for a connection to the network in the region in the last 18 months.

This increase in new renewable generation, led predominantly by onshore wind, has triggered the requirement for further reinforcement of the transmission network in the region beyond that already under construction which collectively make up our Argyll and Kintyre 275kV Strategy.

Part of this strategy involves the newly proposed Creag Dhubh - Inveraray 275kV Overhead Line project, which would see between 8-12 km of new 275kV overhead line constructed between the proposed new substation at Creag Dhubh, and a connection point on to the Inveraray to Crossaig overhead line. It will initially be operated at 132kV, but will be capable of 275kV operation, once the associated transmission network connected substations to the south have been upgraded to 275kV capability.

The existing 132kV overhead line between Inveraray and the proposed new Creag Dhubh substation will be removed following installation of the replacement line.

During the construction of the replacement overhead line, we will need to maintain the local electricity supply, and therefore are required to build new towers at alternative locations to the existing towers.

### Consultation on the Preferred Route

To facilitate the overhead line connection between Creag Dhubh substation and Inveraray we have identified six potential Route Options for the overhead line. As part of this consultation exercise, we are seeking stakeholder comments on our Preferred Route Option prior to carrying out further project design.

## Project Timeline

### July 2021

- Preferred Route Public Consultation

### Autumn 2021

- Preferred Alignment Public Consultation

### Summer 2022

- Development Consents Applications

### Winter 2023

- Anticipated Construction Start

### Spring 2025

- Anticipated Construction Completion

\*Please note that dates are indicative and subject to change dependent on outcomes of consultation



# Creag Dhubh - Inveraray 275kV Overhead Line

## 2. Preferred Technology

### Overhead Line

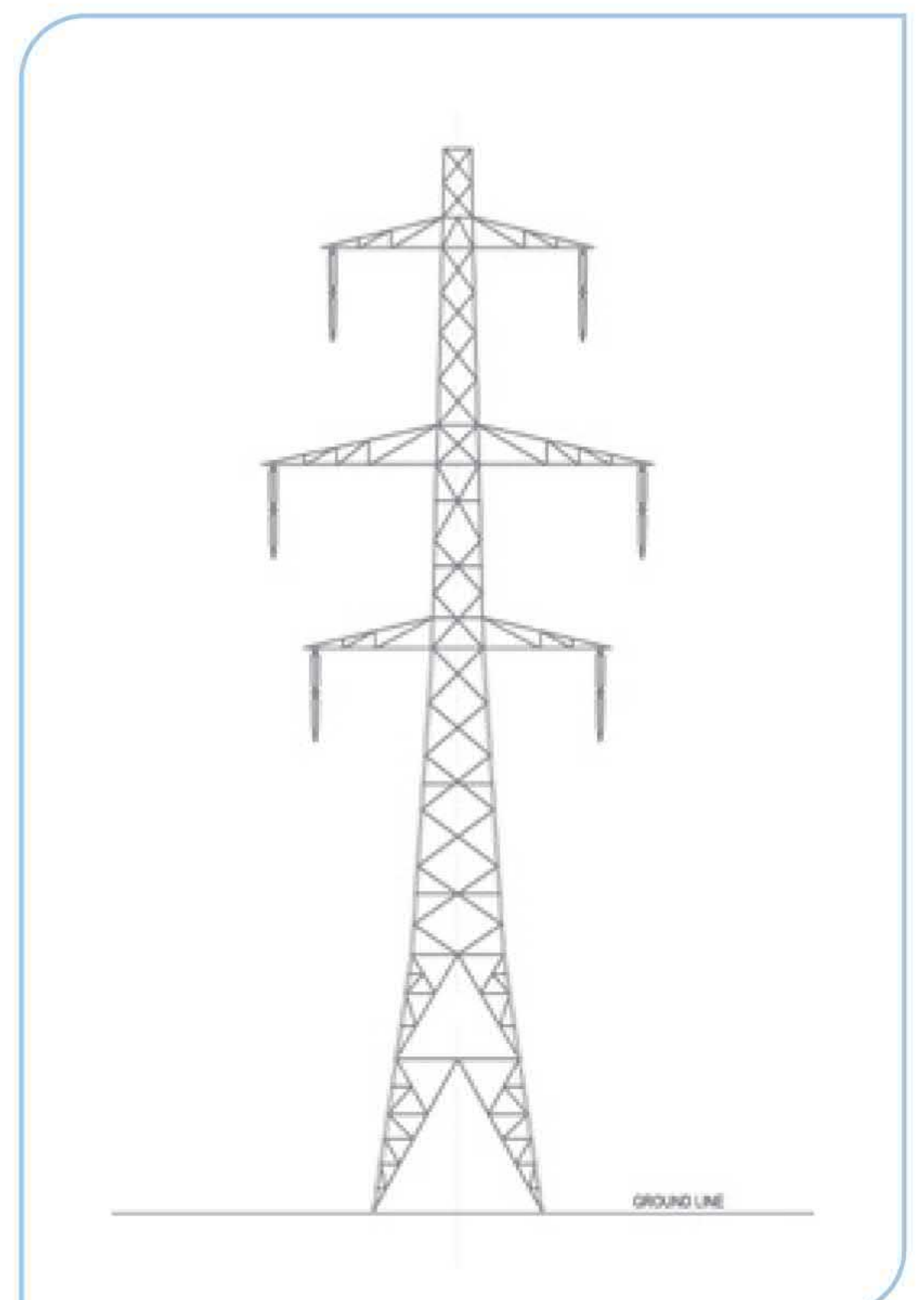
The proposed new 275kV overhead line will replace the existing 132kV overhead line between Inveraray switching station and the proposed Creag Dhubh substation, connecting at Creag Dhubh. The existing line will be decommissioned and removed upon completion of the new line. The remaining 132kV overhead line from Creag Dhubh substation to Taynuilt will not be altered during this project.

The proposed overhead line will consist of towers which are typical for the UK; lattice steel structures with six arms. Each of these arms will carry two electrical wires using an insulated unit. To provide protection from lightning, a single earthwire is attached to the top of the tower. This traditional arrangement is often described as a double circuit arrangement, because each side of the tower carries a single electrical circuit.

In order to accommodate future increases of renewable generation, it is necessary to increase the operating voltage from 132kV to 275kV. As a result of this, the new towers need to be taller which means an increase in span (the distance between each tower). This also means that alternative technologies such as wooden pole or composite pole structures, that are sometimes considered at 132kV, would not be feasible at 275kV.

The spacing between towers would vary depending on topography, altitude, and land use but would likely be between 300m to 350m. Permanent access tracks are required to any angle and terminal tower locations, with temporary access tracks required to access all other towers. At this stage, it has been assumed that towers would be a maximum of 60 m above ground level, with a typical average tower height of 50m above ground level.

The project is still however at the early design stage and any approximations regarding heights, span and tower numbers will be clarified during the next stage of design.



Existing tower height: **Approx. 27m**  
New tower height: **Approx. 50m**

Existing tower span: **Approx. 255m**  
New tower span: **Approx. 300-350m**

Existing number of towers to be removed: **35**  
Number of replacement towers: **Approx. 30**



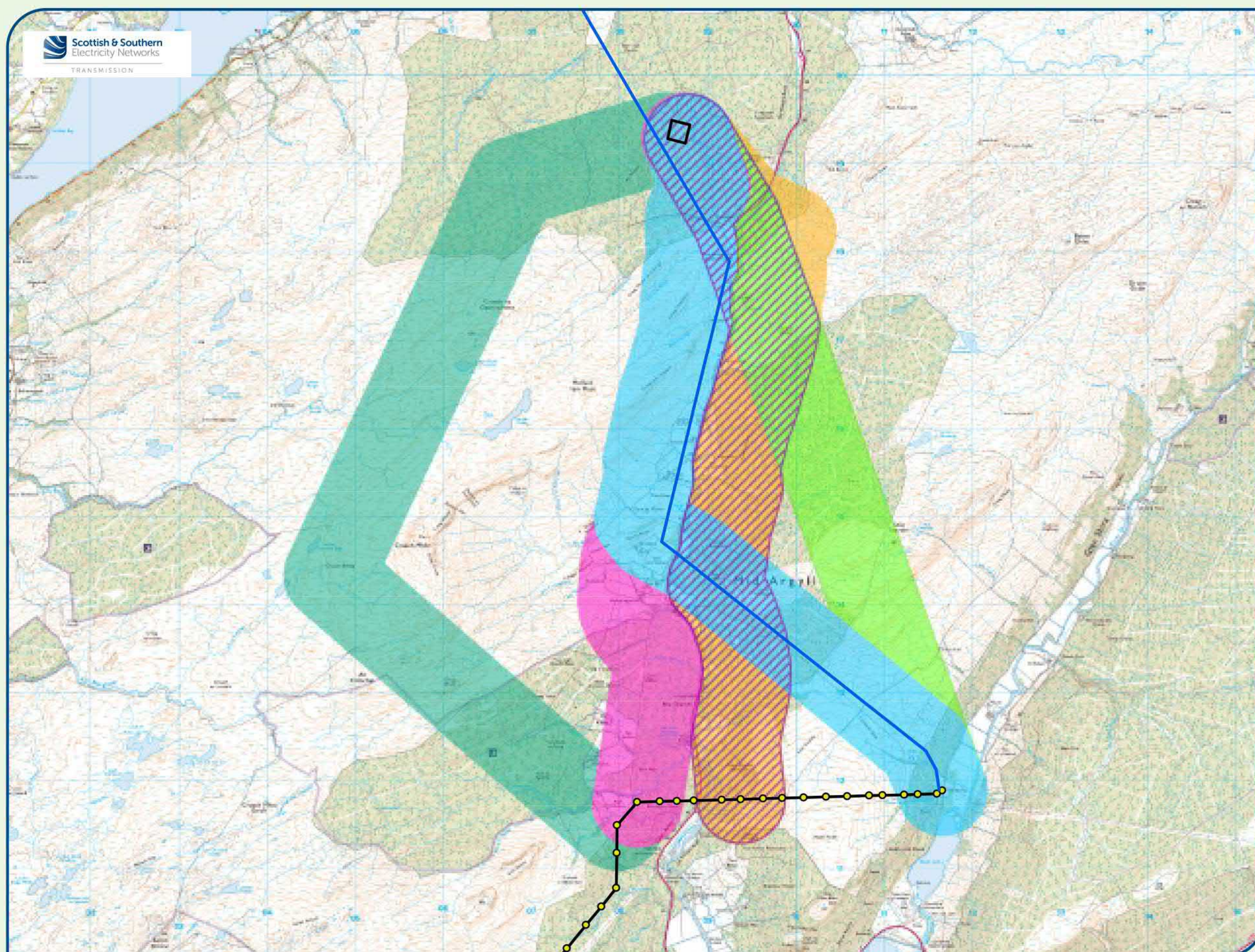
### 3. Routing Options Map

#### Study Area

A Study Area was defined by the existing 132kV overhead line between the proposed Creag Dhubh substation and a connection point on the recently constructed Inveraray to Crossaig overhead line to the north of Inveraray.

The north western boundary of the Study Area follows the southern shore of Loch Awe to the north of Cladich while the south eastern boundary roughly runs along the southern edge of Glen Shira to Inveraray. This allowed a range of Route Options and tie-in locations to be analysed.

Following on from this, six potential Route Options to connect the Inveraray to Crossaig overhead line with the proposed Creag Dhubh substation were developed, taking into account the physical, environmental and amenity constraints. These are shown on the map below.



#### Key

- |                                      |                                    |                                          |
|--------------------------------------|------------------------------------|------------------------------------------|
| Proposed Creag Dhubh Substation      | <b>Route Option Buffer (500 m)</b> | D                                        |
| 132kV OHL from Inveraray to Taynuilt | A                                  | E                                        |
| Inveraray - Crossaig OHL             | B                                  | Preferred Route Option DE Buffer (500 m) |
| Inveraray - Crossaig Towers          | C                                  |                                          |



# Creag Dhubh - Inveraray 275kV Overhead Line

## 4. Routing Options Analysis

### Route Option A:

#### Overhead Line from Balantyre Wood to the Proposed Creag Dhubh Substation

- Requires crossing the existing 132kV overhead line and proposed Blarghour Wind Farm site, but does not cross the A819.
- Properties/buildings within Route are sparsely laid out.
- Avoids intersecting with the Glen Etive and Glen Fyne Special Protection Area (SPA).
- Likely to be highly constrained by extensive priority peatland habitat and high potential to impact on Schedule 1 birds.
- Impacts on visual amenity likely to be more extensive, and potentially impact on some higher sensitivity areas such as the western shore of Loch Awe.
- Longest Route Option at approximately 12km.
- Has the highest elevations with a maximum elevation of 538m.
- Highest cost Route Option.

### Route Option B:

#### Overhead Line from Balantyre Wood to the Proposed Creag Dhubh Substation

- Would cross existing overhead line once and proposed Blarghour Wind Farm access track, doesn't cross A819 and has the least minor crossings.
- Between 2-5% of the Route Option within the 1 in 200-year flood zone.
- Substantially more properties within Route Option than other options.
- Space for tower Alignments limited due to very steep, rocky terrain, proximity of residences and the proximity of the existing line, therefore, mitigating other effects could be difficult.
- Lowest number of recorded golden eagle flights.
- Would avoid likely significant effects during construction through avoiding interactions with the water environment and majority of peatland.
- High potential to interact with Private Water Supplies which could require micrositing or further mitigation.
- Potential to result in the loss of 21.6 ha of Ancient Woodland (larger than any other option).
- Passes through well-preserved pre-Improvement townships at 'Drimfern' and 'South Tullich', that would be difficult to avoid.
- Second lowest cost of the five Route Options.



## 4. Routing Options Analysis

### Route Option C:

#### Overhead Line from Inveraray Substation to the Proposed Creag Dhubh Substation

- Crosses existing overhead line, the A819 and Ladyfield plantation woodland, an area with potential to contain unexploded ordnance (UXO) associated with historic use as a firing range.
- Has between 2-5% of the Route Option within the 1 in 200-year flood zone.
- Second highest number of properties within Route Option.
- Space for tower Alignments limited due to very steep, rocky terrain, proximity of residences and the proximity of the existing line. Therefore, mitigating other effects could be difficult.
- Smallest loss of Ancient Woodland and long-established woodland (depending on Alignment) as well as second lowest area of commercial forestry lost.
- Second lowest number of recorded golden eagle flights.
- High potential for Route to interact with Private Water Supplies.
- Would require crossing the River Aray and passes through well-preserved pre-Improvement townships at 'Drimfern' and 'South Tullich', that would be difficult to avoid.
- Second highest total cost of the five Route Options.

### Route Option D:

#### Overhead Line from Carloonan to the Proposed Creag Dhubh Substation

- Crosses the existing 132kV overhead line once and the A819, passes through Ladyfield plantation woodland.
- Between 2-5% within the 1 in 200-year flood zone and runs through the second lowest area of peatland.
- Properties/buildings are sparsely laid out.
- High potential to be constrained as it intersects the Glen Etive and Glen Fyne SPA.
- Potential to compromise conservation status of Schedule 1 birds, however, area of the Glen Etive and Glen Fyne SPA intersected by this option has comparatively low levels of golden eagle activity.
- Least impact on visual receptors as could be accommodated within the enclosed glen landscape.
- Passes through fewer areas of open habitat so may have fewer interactions with watercourses.
- Second greatest loss of Ancient Woodland and commercial plantation, potential implications to downstream hydrology.

### Route Option E:

#### Overhead Line from Inveraray Substation to the Proposed Creag Dhubh Substation

- Wouldn't cross existing overhead line but would cross A819 and Ladyfield plantation woodland.
- No properties within this Route Option.
- Runs through second largest area of peatland.
- Second highest elevation, after Route Option A.
- Has high potential to be constrained as intersects the Glen Etive and Glen Fyne Special Protection Area.
- Considered likely to compromise the conservation status of Schedule 1 birds, however, passes through fewer areas of open habitat so may have fewer interactions with watercourses.
- Has the lowest total cost of the five Route Options.



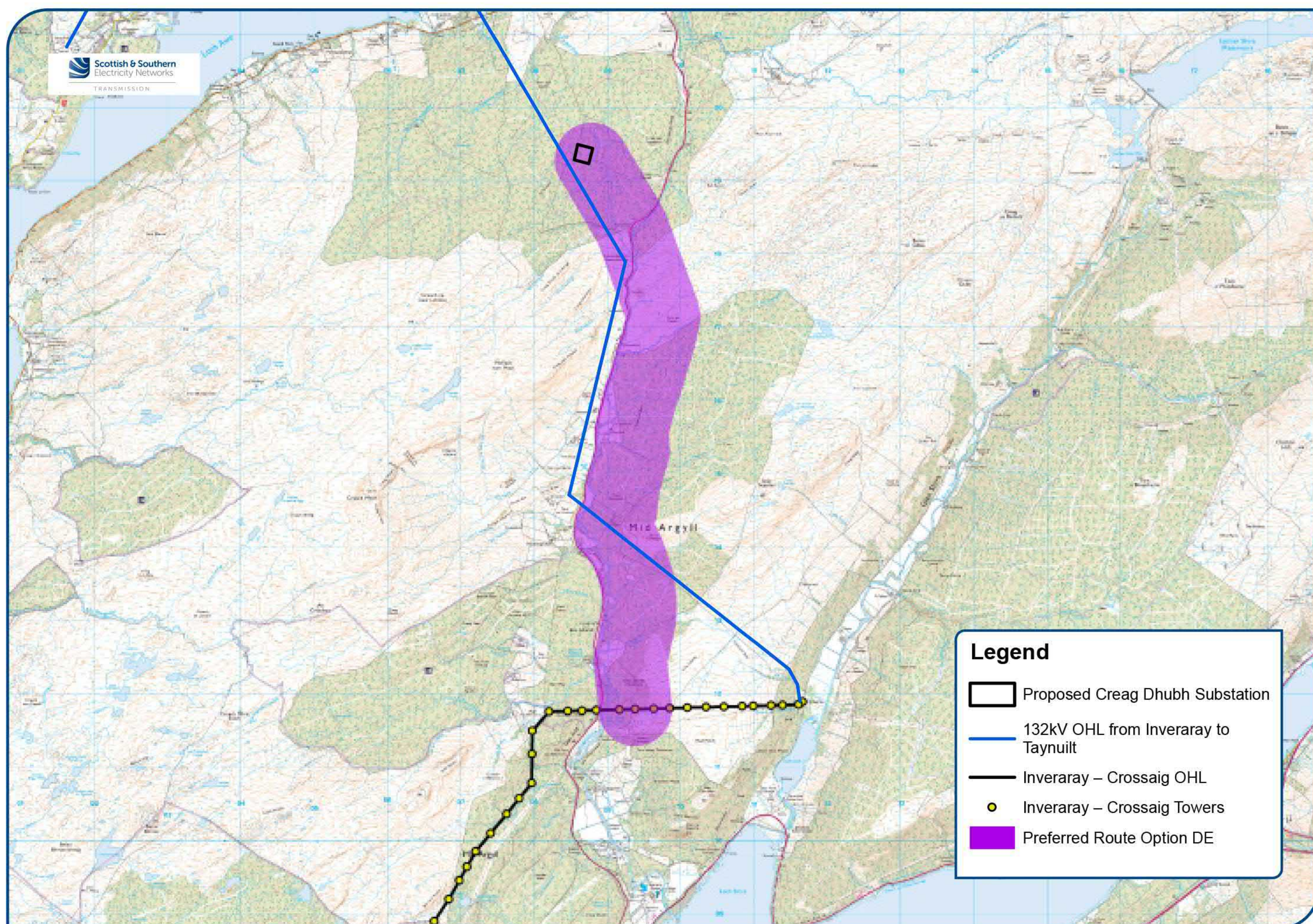
# Creag Dhubh - Inveraray 275kV Overhead Line

## 5. Our Preferred Route Option

### Route Option DE (Preferred):

The aim of our routing guideline process is to provide a balanced assessment of cost engineering and environmental factors in order to select the Preferred Route for the new overhead line. Through analysis of the five Route Options, taking account of the factors listed above, a combination of Route Options D and E was considered the optimum solution. This Route Option DE follows Route Option D in the south from Inveraray to where it intersects Route Option E, then follows Route E to the Creag Dhubh substation. Therefore, Route Option DE has been identified as our Preferred Route.

This option intersects the Glen Etive and Glen Fyne Special Protection Area in the north but avoids the areas within the Study Area with the highest density of protected bird flight activity. It also appears to pass through fewer areas of open habitat so may have fewer interactions with wetlands. This does however mean a greater area of forestry felling may be required, which has potential implications to downstream hydrology. It will have the second greatest loss of Ancient Woodland and commercial plantation, however, would have the least impact on visual receptors as the Route could be within the enclosed glen landscape, therefore, forestry and woodland would provide a high degree of screening of the central and southern sections.





## 6. Red Amber Green (RAG) Charts

To demonstrate the full extent of analysis undertaken on the six Route Options identified, we created Red Amber Green (RAG) table's which illustrate the level of associated risk to each consideration. A high risk is shown as red, a medium risk is shown as amber and a low risk is shown as green.

For further information on the Route Options analysis, please refer to the Consultation Document available from the project webpage or on request.

### RAG Impact Rating- Environmental

Environmental	Route Option					
	A	B	C	D	E	DE
<b>Natural Heritage</b>						
European Designated Sites-Ornithology	Green	Amber	Amber	Red	Red	Red
Designated Sites-Ancient Woodland	Amber	Red	Amber	Red	Amber	Red
Regional Designations	Green	Green	Green	Green	Green	Green
Protected Species	Green	Green	Green	Green	Green	Green
Habitats	Red	Amber	Amber	Green	Green	Green
Schedule 1 Birds	Red	Amber	Amber	Amber	Red	Red
Birds of Conservation Concern	Green	Green	Green	Green	Green	Green
Hydrology / Geology	Red	Amber	Amber	Amber	Red	Red
<b>Cultural Heritage</b>	A	B	C	D	E	DE
Designations	Amber	Amber	Amber	Amber	Amber	Amber
Cultural Heritage Assets	Green	Red	Red	Amber	Amber	Amber
<b>People</b>	A	B	C	D	E	DE
Proximity to Dwellings	Amber	Amber	Amber	Amber	Green	Amber
<b>Landscape and Visual</b>	A	B	C	D	E	DE
Designations	Amber	Amber	Amber	Amber	Amber	Amber
Character	Green	Amber	Amber	Amber	Amber	Amber
Visual	Amber	Green	Green	Green	Green	Green
<b>Land Use</b>	A	B	C	D	E	DE
Agriculture	Green	Green	Green	Green	Green	Green
Forestry	Amber	Amber	Amber	Amber	Amber	Amber
Recreation	Green	Green	Green	Green	Green	Green
<b>Planning</b>	A	B	C	D	E	DE
Policy	Green	Green	Green	Amber	Amber	Green
Proposals	Amber	Amber	Green	Green	Green	Green

### RAG Impact Rating- Engineering

Engineering	Route Option					
	A	B	C	D	E	DE
<b>Infrastructure crossings</b>						
Major Crossings	Red	Red	Red	Red	Green	Red
Minor Roads	Amber	Amber	Red	Red	Red	Red
<b>Environmental Design</b>	A	B	C	D	E	DE
Elevation	Red	Amber	Amber	Amber	Red	Green
Contaminated Land	Green	Green	Green	Green	Green	Green
Flooding	Green	Red	Red	Red	Green	Red
<b>Ground Condition</b>	A	B	C	D	E	DE
Terrain	Green	Amber	Green	Green	Green	Green
Carbon & Peatland	Red	Amber	Red	Red	Red	Red
<b>Proximity</b>	A	B	C	D	E	DE
Clearance	Red	Red	Red	Red	Green	Green
Windfarms	Red	Amber	Amber	Green	Green	Green
Communication Masts	Red	Red	Red	Green	Green	Green
<b>Additional Consideration</b>	A	B	C	D	E	DE
Route length	Red	Green	Green	Green	Green	Green
Unexploded rounds	Green	Green	Red	Red	Red	Red

### RAG Impact Rating- Cost

Cost	Route Option					
	A	B	C	D	E	DE
<b>Capital</b>						
Capital	Red	Green	Amber	Green	Green	Green
Diversions	Red	Red	Red	Red	Green	Red
Public Road Improvement	Green	Green	Green	Green	Green	Green
Tree Felling	Red	Amber	Red	Red	Green	Red
Land Assembly	Red	Green	Green	Green	Green	Green
Consent Mitigations	Green	Green	Green	Green	Green	Green
Inspections	Red	Green	Green	Green	Green	Green
Maintenance	Red	Green	Green	Green	Green	Green
<b>Total Cost</b>						
Total Cost	Red	Green	Amber	Green	Green	Green



## **APPENDIX 5: CREAG DHUBH TO INVERARAY 275 KV OHL CHANGE OF PREFERRED ROUTE POST CARD DROP**



# Argyll and Kintyre 275kV Strategy

## Creag Dhubh - Inveraray 275kV Overhead Line Route Update



TRANSMISSION

### SSEN Transmission would like to update you on the progress of the Creag Dhubh – Inveraray Overhead Line (OHL) Project

In July 2021 SSEN Transmission held virtual public consultations to share information and seek feedback on our proposals to build a new 275kV overhead line to replace the existing 132kV overhead line between Inveraray switching station and the proposed Creag Dhubh substation.

The project is part of the Argyll and Kintyre 275kV Strategy, which is a group of projects designed to deliver an increase in network capability to enable the connection of further renewable generation and to export energy to the wider GB network.

Following our consultation in 2021 and the feedback received, SSEN Transmission selected Route Option D/E as the preferred route. The project then moved into the Alignment stage where we determine the proposed location of the overhead line within the selected route corridor.

During the alignment stage, more detailed survey work and discussions with landowners and the Ministry of defence revealed that Route Option D/E was not suitable as it passes through an area that posed a high risk from unexploded ordnance (UXO). Route Option B will be taken forward as the Preferred Route as of the original route options considered this was the least constrained from an environmental, technical and cost perspective and avoids the area of high UXO risk. Both routes can be seen on the map overleaf.

As a nearby resident, we wanted to let you know about this change to the project ahead of our next round of consultation which is due to take place in May. During this next round of consultation, we will be sharing the Preferred Alignment for the OHL within Route Option B and seeking your feedback.



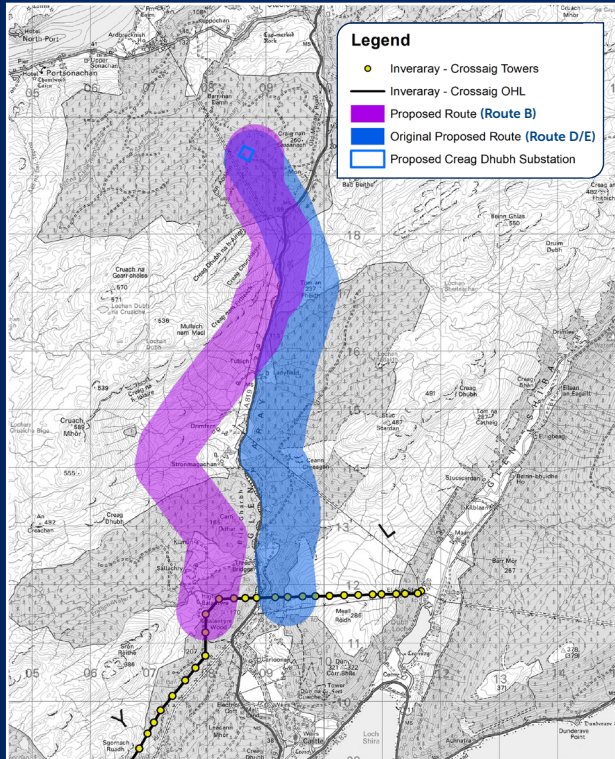
If you have any questions, further information is available on our dedicated project website, where you can also sign up for updates if you wish to be contacted about the Creag Dhubh – Inveraray 275kV OHL project: [www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/](http://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/)

Or you can contact the Community Liaison Manager  
for the project, Caitlin Quinn:

**Caitlin.Quinn@sse.com**  
07901 135 758  
1 Waterloo St  
Glasgow G2 6AY



The preferred route for the overhead line which SSEN Transmission will be progressing is Route B, shown in purple on the map below:



[www.ssen-transmission.co.uk](http://www.ssen-transmission.co.uk)

  @ssencommunity



## **APPENDIX 6: CREAG DHUBH TO INVERARAY 275 KV OHL WEBSITE**



[Home](#) > [Projects](#) > Creag Dhubh - Inveraray 275kV Overhead Line

# Creag Dhubh - Inveraray 275kV Overhead Line



**Project overview**

Project updates

Project documentation

FAQs

**Project Type:** Transmission reinforcement  
**Location:** Argyll & Bute

## Contact Details

Liaison Manager

Land Manager

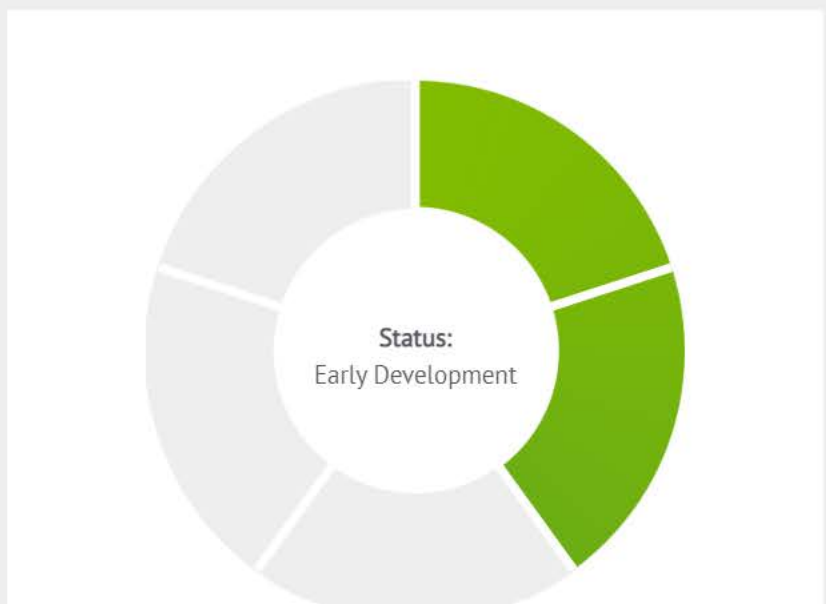
**Caitlin Quinn**

**Title:** Community Liaison Manager

**Email:** [caitlin.quinn@sse.com](mailto:caitlin.quinn@sse.com)

**Telephone:** 07901 135 758

**Address:** 1 Waterloo Street, Glasgow G2 6AY



## Latest



**Key milestone in proposals to upgrade Argyll and Kintyre electricity network**

Date: 26 Sep 2022

[View article](#) / [View all articles](#)



**Argyll network upgrade to support the transition to net zero emissions**

We have submitted our Initial Needs Case for the Argyll and Kintyre 275kV Strategy to Ofgem



## **APPENDIX 7: CREAG DHUBH TO INVERARAY 275 KV PRESS ADVERT POSTER AND MAILDROP MAY 2022**



# Argyll and Kintyre 275kV Strategy

## Public Consultation Events May/June 2022

- Creag Dhubh - Inveraray 275 kV Overhead Line
- Blarghour Wind Farm Connection

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

### What is happening?

SSEN Transmission is holding a series of Public Consultation Events to gain views and feedback on two projects, each of which are at different stages in their development:

- **Creag Dhubh - Inveraray 275 kV Overhead Line – Alignment Consultation**

This project involves the construction and operation of between 8 and 12 km of new 275 kV overhead line, supported by steel lattice towers, between the proposed new substation at Creag Dhubh and a connection point on the recently constructed Inveraray to Crossaig overhead line.



TRANSMISSION

In July 2021, SSEN Transmission held virtual public consultations to share information and seek feedback on the Route Options for these proposals. Since this consultation, we have developed the project and we now have a Preferred Alignment which we would like your views on. The Preferred Alignment is within Route Option B.

- **Blarghour Wind Farm Connection – Route Options Consultation**

SSEN Transmission seeks to connect the proposed Blarghour Wind Farm to the wider electricity network. The project will connect and operate a 132 kV overhead line between the proposed Blarghour Wind Farm and the proposed Creag Dhubh Substation. This connection requires between 5 and 8 km of new overhead line, depending on the route taken. During this consultation we are seeking feedback on two Route Options for this connection. Both projects are part of the Argyll and Kintyre 275 kV Strategy, which is group of projects designed to deliver an increase in network capability to enable the connection of further renewable generation and to export energy to the wider GB network.

**Please note that comments made to SSEN Transmission are not representations to the Scottish Ministers and when SSEN Transmission submits the Section 37 applications for the above projects there will be an opportunity to make representations on these applications to the Scottish Ministers.**



## Come and meet us at the Loch Fyne Hotel, Inveraray, on:

Wednesday 18th May 2022 (2pm – 7pm)

Thursday 19th May 2022 (2pm – 7pm)

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Or join us online, via the project webpage, to  
chat with the project team using live Instant  
Message chat at the following times:

Tuesday 24th May 2022 (5:00pm – 7:00pm)

Wednesday 25th May 2022 (5:00pm - 7:00pm)

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For further information on the proposals, please visit our  
dedicated webpages, where you can also sign up for  
updates if you wish to be contacted about the projects:



[www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line](http://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line)



[www.ssen-transmission.co.uk/projects/blarghour-wind-farm-connection-project/](http://www.ssen-transmission.co.uk/projects/blarghour-wind-farm-connection-project/)

Or you can contact the Community Liaison Manager for  
the project, Caitlin Quinn:

Caitlin.Quinn@sse.com

07901135758, 1 Waterloo St, Glasgow, G2 6AY

We kindly request that feedback forms are submitted by  
Monday 6th June 2022.