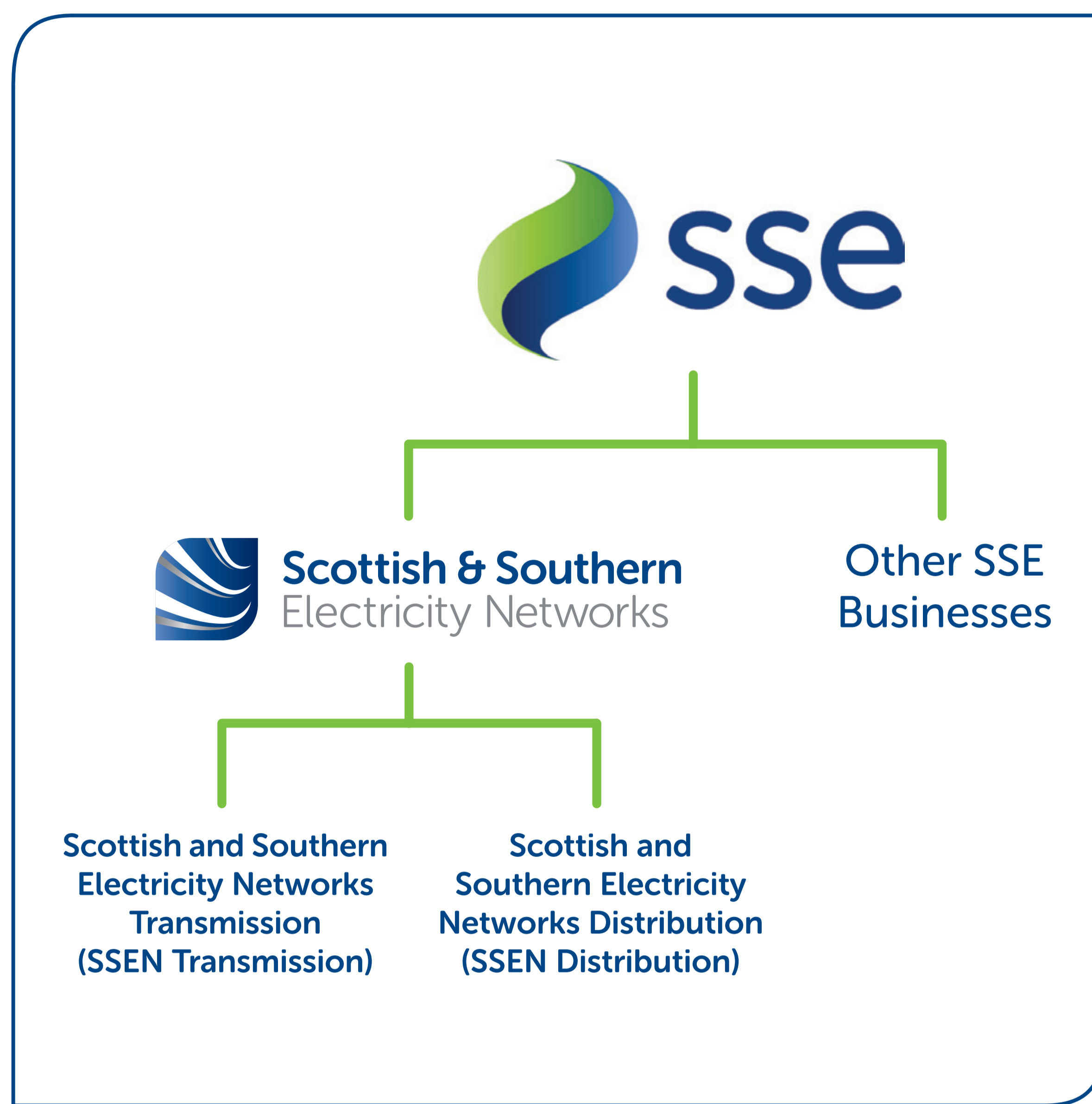


## **ANNEX C (1 OF 2): MELGARVE CLUSTER PROJECT: ALIGNMENT STAGE EXHIBITION BOARDS – FEBRUARY 2023**

# Who we are

We are Scottish and Southern Electricity Networks Transmission (SSEN Transmission), operating under licence as Scottish Hydro Electric Transmission plc (SHE Transmission) for the transmission of electricity in the north of Scotland.



## What is the difference between Transmission and Distribution?

For the north of Scotland, this confirms the need for over £7bn of investment in onshore electricity transmission infrastructure to deliver 2030 targets and a pathway to net zero, several of which will require accelerated development and delivery to meet 2030 connection dates. The need for these reinforcements has been further underlined within the recent British Energy Security Strategy (2). This sets out the UK Government’s plans to accelerate homegrown power for greater energy independence.

The strategy aims to reduce the UK’s dependence on and price exposure to global gas wholesale markets via the deployment of homegrown low carbon electricity generation supported by robust electricity network infrastructure.

## About us

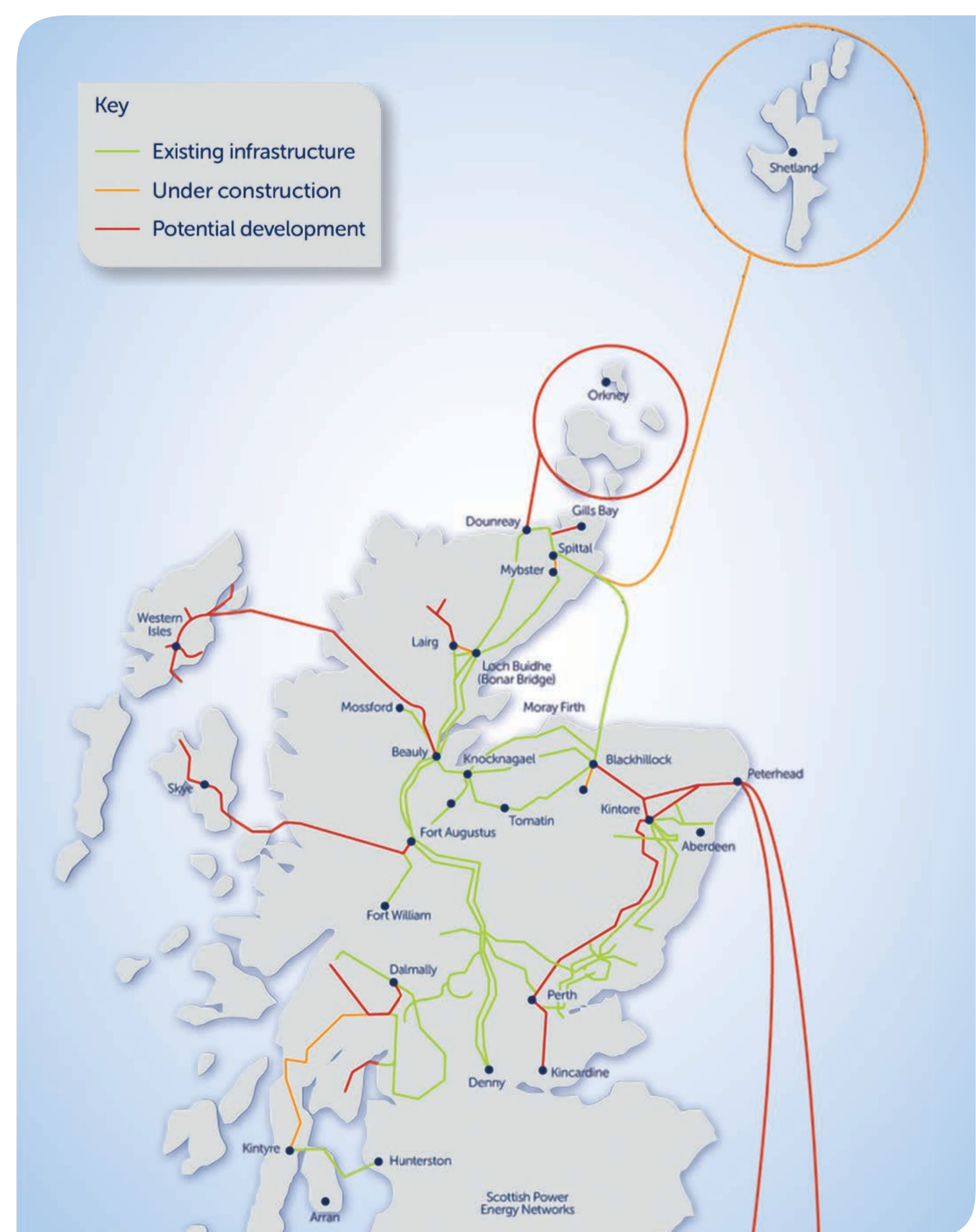
Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers’ Pension Plan Board. We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network. 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 7GW of renewable generation connected in the north of Scotland.

## Overview of Transmission projects



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. 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.

 SSEN Community

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[ssen-transmission.co.uk/projects/project-map/melgarve-cluster/](https://ssen-transmission.co.uk/projects/project-map/melgarve-cluster/)

# Project need and updates

This project is needed to connect the Cloiche wind farm (200MW) and the Dell wind farm (49.8MW) into the existing Melgarve 400/132kV substation to enable export of the electricity from these wind farms into the SSEN Transmission system.

This will involve the following elements of work which have been collectively termed as the Melgarve Cluster.

## Project timeline

The design and construction to connect the Cloiche and Dell wind farms into the existing Melgarve 400/132kV substation by Spring 2027 will be undertaken under the following timeline:



## Glenshero Wind Farm Connection

Earlier consultation had referred to a connection to the proposed Glenshero wind farm. However, this has since been refused consent and the connection proposals are no longer required.

**In the interest of transparency, we are presenting this cluster of works as a whole to ensure all local community members are aware of the full extent of the proposals and are invited to comment on the development of each.**

## Melgarve substation

Previously it was expected that an extension would be required to the existing Melgarve 400/132kV substation. However, following detailed investigations it will now only be necessary to make changes within the substation to accommodate additional equipment and linkages into the substation. These internal works would not require planning permission and linkages into the substation would be dealt with via the Cloiche and Dell proposals.

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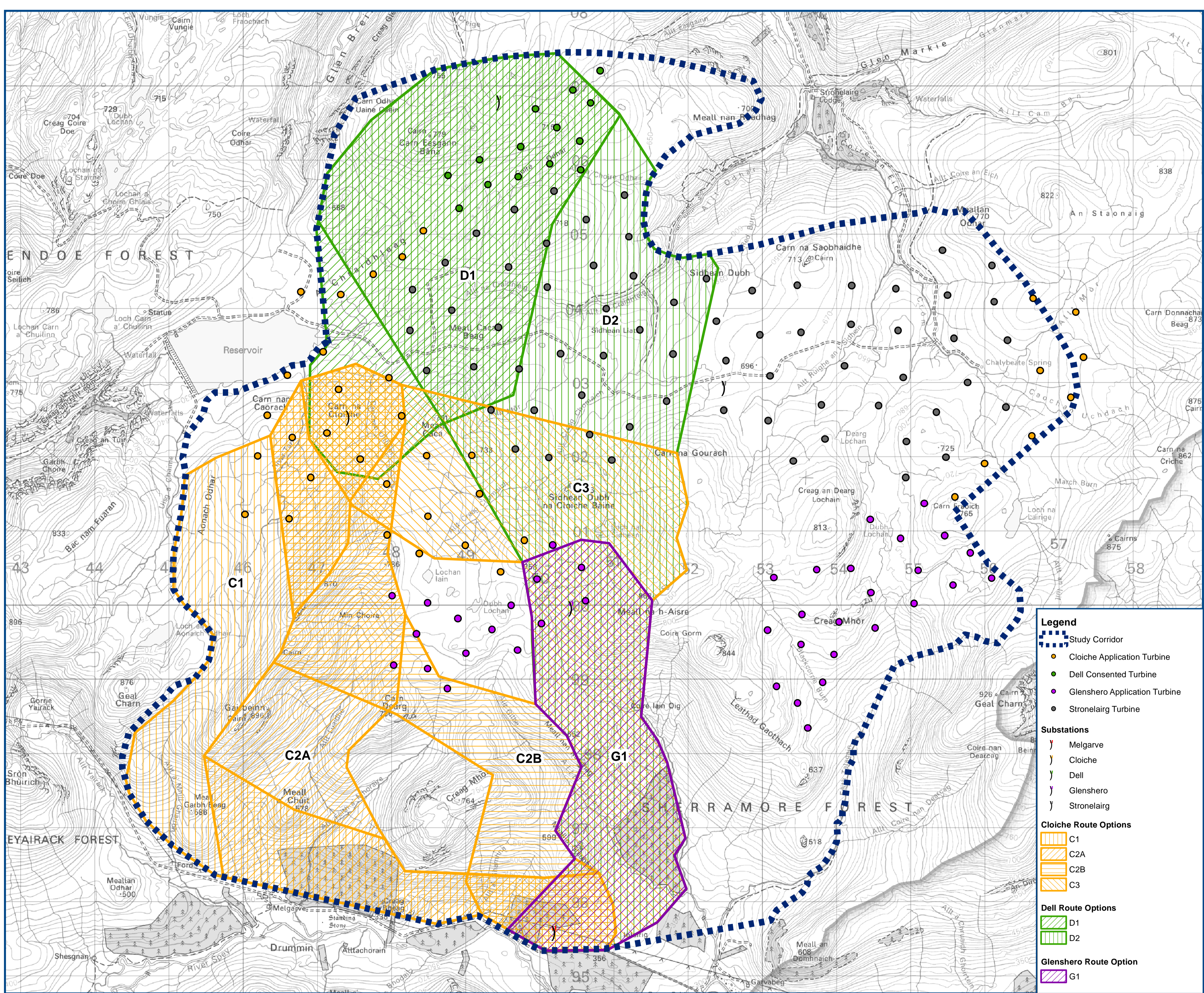
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# Feedback from routeing consultation process

SSEN Transmission published a route consultation document in November 2021. This followed on from a detailed routeing process and identified broad (typically 1km wide) routes through which a connection to the wind farms might be located.

A number of different routes were considered taking into account physical and development constraints identified, namely the topography and the operational wind farm and proposed wind farms within the area. The preferred route selected is Route D1-C3 as identified below, chosen as it had the least technical and environmental constraints such as topography, access, cultural heritage, sensitive habitats and landscape character. This was broadly agreed with the Statutory Consultees to be a suitable route for more detailed alignment assessment to occur within. Detailed comments were received which have been considered at the alignment stage and will be considered as the detailed design progresses.



## Key feedback

- Design to be sensitive to the landscape and natural heritage of the area;
- Suitable visual, habitat and specialist ornithological surveys required to understand baseline and avoid impact/provide mitigation;
- Further consideration on wider use of UGC;
- Opportunities to rationalise infrastructure to be explored;
- Use of existing tracks to be maximised—noting this may have impacts on existing/proposed wind farms;
- Transport/road impacts to be assessed/mitigated—including construction traffic;
- Impact on tourism (shooting/long distance paths) to be considered;
- Impact on flooding/drainage considered.

These comments have been given careful consideration through the alignment stage and in arriving at a Preferred Alignment. Comments are invited on this process in the section below.



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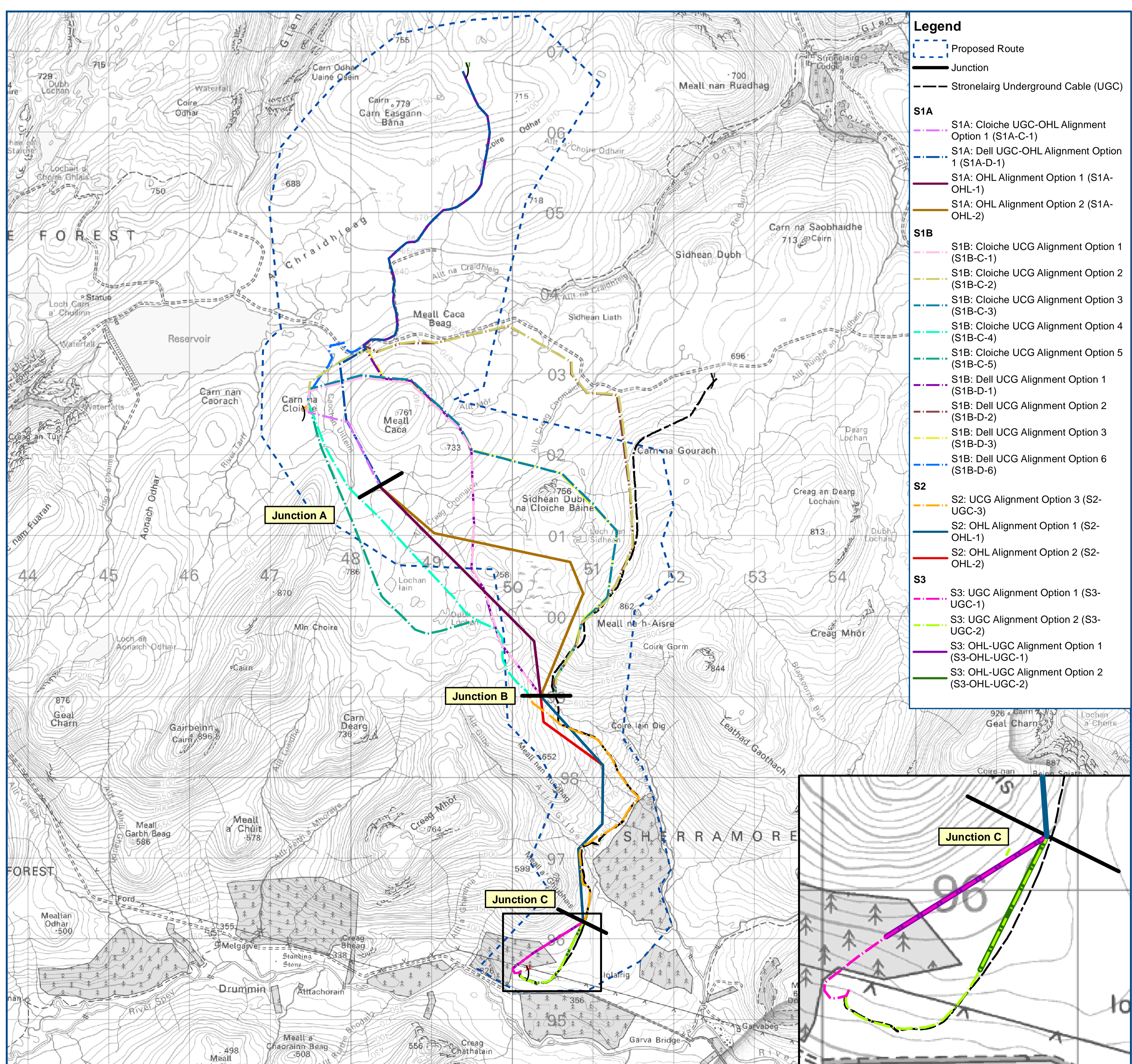
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# Cloiche and Dell alignment selection consultation

SSEN Transmission is consulting on the selection of a preferred alignment in February 2023. The consultation document posted on the project website provides the detailed justification for the preferred alignment presented.

Overhead lines and underground cables are subject to a detailed alignment selection process. This ensures the preferred alignment selected provides a balance between meeting technical requirements, causing the least practical impact on the environment, being cost effective and avoiding disturbance to those living, working or visiting the area.

As explained earlier, at the Route Consultation stage (in December 2021/January 2022) feedback was received suggesting that due to landscape and ornithological impacts, SSEN Transmission should revisit the rationale for using overhead lines (OHL) and consider using underground cables (UGC) as an alternative. This has been considered at the Alignment stage, and where feasible, both these options are considered side by side. There is no opportunity to route an OHL through the existing Stronelairg wind farm due to proximity issues with the turbines, or for it to cross the existing Beauly–Denny line near Melgarve substation. All options considered are shown below.



## Alignment options considered

The plan above shows the differing routes which were considered in the alignment process. This includes both OHL and UGC options. To assist assessment this has been broken down into Sections (1, 2 and 3) and 'Junctions' where routes intersect. Junction A is where the UGC through the wind farms transition to OHL, however not all options pass through Junction A so assessment is considered in terms of the various sections above.



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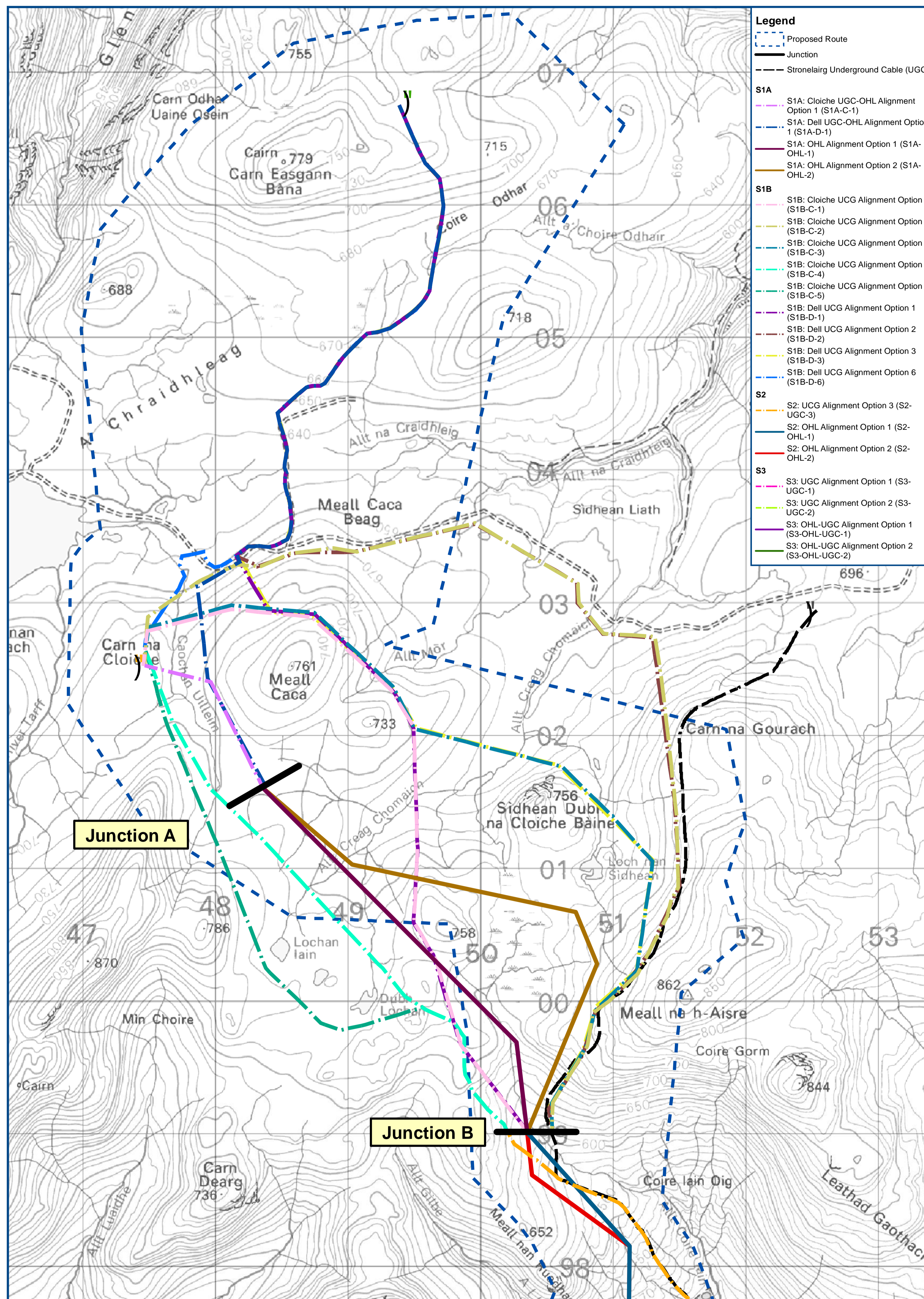
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# Cloiche and Dell alignment selection consultation

## Dell/Cloiche to Junction B (Section 1)

Includes some combined UGC–OHL/UGC only options



The alignment represents a balance of a number of considerations.

### Section 1A - Cloiche and Dell via Junction A (combination UGC–OHL options only)

UGC from Dell/Cloiche can utilise existing/proposed access tracks to minimise any impacts. OHL options having varying landscape/visual and ornithological impacts. The southerly OHL option (S1A-OHL-1) is most direct, has fewer more dominant angle towers and therefore least impactful in these terms.

### Section 1B - Cloiche and Dell direct to Junction B (UGC options only)

Solely UGC options which bypass Junction A and take diverse routes to Junction B in terms of elevation, length/directness, reliance on existing/proposed access tracks, peatland, protected habitats and water courses. Routes maximising use of existing access tracks have a lesser environmental impact, but these are significantly longer/technologically constrained through the wind farm.

#### OHL benefits - environmental

- Ability to span over sensitive habitats—UGC disturbs 30m corridor during construction;
- Ability to span over protected species—UGC disturbs 30m corridor as above;
- Ability to reduce Biodiversity Net Gain (BNG) impact by spanning over sensitive/irreplaceable habitats.



#### UGC benefits - environmental

- Buried underground so only temporary impact in Landscape/character terms;
- Buried underground so only temporary impact in Visual impact terms;
- Temporary impacts on Ornithology as buried underground.

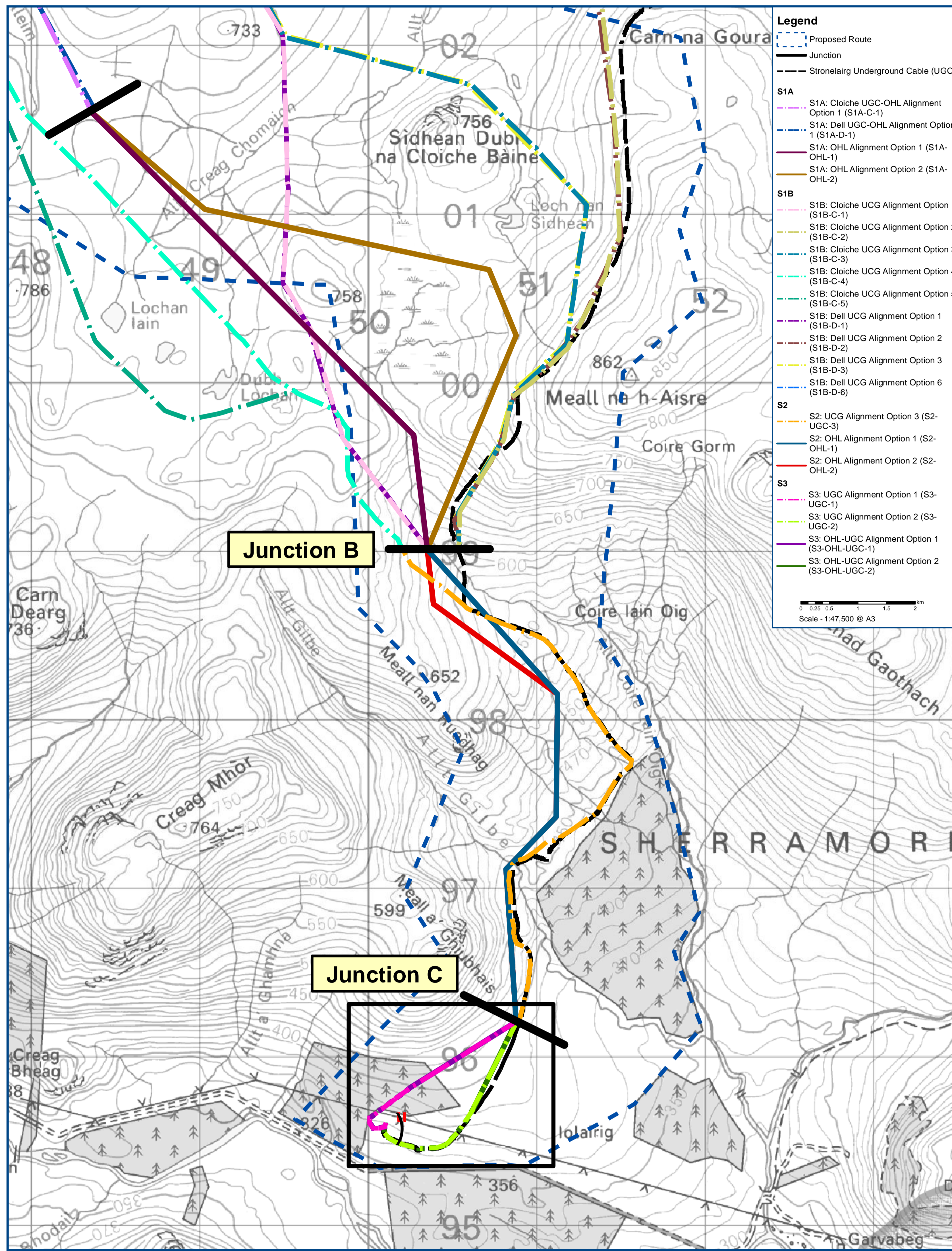
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# Cloiche and Dell alignment selection consultation

## Junction B Southwards



The alignment represents a balance of a number of considerations.

### Section 2

UGC and OHL options exist from Junction B–C. These are in proximity of the Stronelairg access track and have a greater level of commonality. The western OHL option (S2-OHL-2) have fewer more dominant angle towers, and so are less visible/impactful. UGC routes have varying impacts on water courses depending on their route.

### Section 3

UGC and UGC–OHL options from Junction C–Melgarve. Divergence of routes here to access via the east/west side of the substation. Access tracks exist to the easterly route which is also flatter and less interface with nearby woodland.

This consultation seeks views from the public, statutory authorities and other interested stakeholders on the preferred alignment identified for the connection of Cloiche and Dell wind farms.

**OHL benefits - engineering**

- Can span over steep/peaty terrain;
- Less constrained by obstacles (e.g. rivers/roads) as can span over these;
- Easier for maintenance purposes;
- Cheaper and more reliable technology in challenging terrain;
- Potential for less disturbance for construction access;
- Less losses through the network.



**UGC benefits - engineering**

- Can traverse through existing wind farms;
- Likely to have fewer maintenance points required (just at junction/link boxes);
- Little above ground infrastructure required.

