

Skye Reinforcement Project

June 2020

The virtual consultation events will be taking place on:

9 June 2020	14:00 – 16:00
10 June 2020	10:00 – 12:00
11 June 2020	18:00 – 20:00

To find out how you can join the interactive virtual consultation visit ssen-transmission.co.uk to find out more.



Scottish & Southern
Electricity Networks

Who we are

We are Scottish and Southern Electricity Networks, operating under licence as Scottish Hydro Electric Transmission Plc (SHE Transmission).

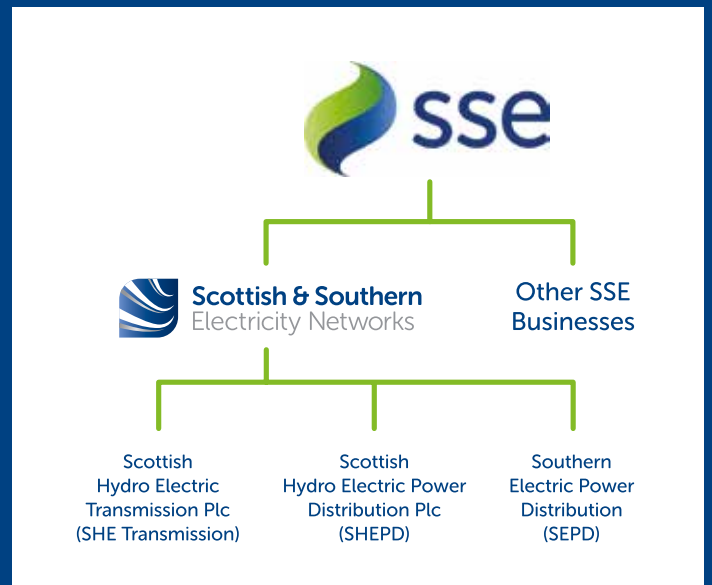
We maintain and invest in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network in the north of Scotland. Our network consists of underground and subsea cables, overhead lines on wooden poles and steel towers, and electricity substations, extending over a quarter of the UK's land mass crossing some of its most challenging terrain.

We power our communities by providing a safe and reliable supply of electricity. 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 responsibilities

We have a licence for the transmission of electricity in the north of Scotland and we are closely regulated by the energy regulator Ofgem. Our licence stipulates that we must develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

Overview of Transmission Projects



What is the difference between Transmission and Distribution?

Electricity Transmission is the transportation of electricity from generating plants to where it is required at centres of demand. The Electricity Transmission network, or grid, transports electricity at very high voltages through overhead wires, underground cables and subsea cables. The transmission network connects large scale generation, primarily renewables, to central and southern Scotland and the rest of Great Britain. It also helps secure supply by providing reliable connection to the wider network of generation plans. The Electricity Distribution network is connected into the Transmission network, but the voltage is lowered by transformers at electricity substations, and the power is then distributed to homes and businesses through overhead lines or underground cables.

In total we maintain about 5,000km of overhead lines and underground cables – easily enough to stretch across the Atlantic from John O’Groats all the way to Boston in the USA. Our network crosses some of the UK’s most challenging terrain– including circuits that are buried under the seabed, are located over 750m above sea level and up to 250km long. The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link between the new sources of power and electricity users. Scottish and Southern Electricity Networks is delivering a major programme of investment to ensure that the network is ready to meet the needs of our customers in the future.

What is the Skye Reinforcement project?

The Skye reinforcement project is the replacement of the existing overhead electricity transmission line that runs from Fort Augustus to Ardmore in the north of Skye. This consultation seeks views on the preferred route proposed for the replacement overhead line. The feedback received from this consultation will help inform the more detailed overhead line route, which will be consulted on in Autumn 2020.

Why is the Skye Reinforcement project – changing drivers

Between 2016 and 2018 we consulted on proposals to install a second overhead wood pole line, broadly in parallel with the existing line, to connect a number of renewable electricity generators looking to connect to the transmission network.

Following a review of the asset condition of the existing overhead line it was identified that this needed replacement to maintain security of supply.

This project was therefore stopped in 2018 to allow for a more holistic and enduring approach that will meet future security of supply needs, connect renewables and support the transition to net zero.

Securing supply

The current overhead line was constructed between 1956 and 1989 and is now reaching the end of its operational life. The replacement is essential to maintain security of supply to homes and businesses along its route, as well as to the Western Isles, which is supplied by two subsea cables from the north of Skye.

Connecting renewables

There is clear demand to connect new renewable electricity generation between Fort Augustus and Skye, with over 100MW of contracted generation which requires an increase in capacity of the overhead line. There is also the potential for additional generation to come forward, with over 200MW of generation currently in scoping.

Network for net zero

We intend to 'future proof' the replacement line to allow the connection of additional renewables that may be required to help meet Government 'net zero' climate change targets. This will greatly reduce the need for additional major works in the future, helping keep local disruption to a minimum.



Our role in supporting the transition to net zero

Climate change is already affecting people, ecosystems and livelihoods around the world. Tackling climate change is the greatest challenge of our generation. There is growing consensus that to tackle climate change we need to fully decarbonise the economy, creating net zero emissions, to prevent the worst effects of global warming. Responding to the advice of the Committee on Climate Change, the UK Government has committed to achieving net zero emissions by 2050 and the Scottish Government committing to meet this target five years earlier, in 2045.

With the north of Scotland home to some of the UK's greatest resources of renewable energy, we have a critical role to play in the transition to net zero - by building the transmission infrastructure required to connect renewable electricity generation and transporting that clean electricity to where it is needed.

Proposed technology

As the volume of power that can be transported on overhead wood pole lines is limited, to meet the required capacity of the replacement line, steel structures will be required from Fort Augustus to Edinbane on Skye; with wooden pole remaining from Edinbane to Ardmore. The alternative would be multiple overhead wood pole lines, which would result in significant environmental impacts and would not be economical to the GB electricity consumer.

Project Scope & Overview

The existing 132 kV overhead line (OHL) from Fort Augustus to Ardmore on the Isle of Skye is the sole connection from the mainland electricity transmission system to Skye and the Western Isles and is essential for maintaining security of supply in the area.

Recent studies into the condition of the existing infrastructure have indicated that the section of the OHL between Quoich substation and Ardmore substation requires to be rebuilt and upon completion of construction of the new line, the existing line removed. Furthermore, as a result of an increase in renewable energy projects requesting access to the electricity transmission network, there is a requirement to increase the capacity of the OHL in its entirety.

To facilitate the known connection requirements, the main elements of the proposed development solution are summarised below:

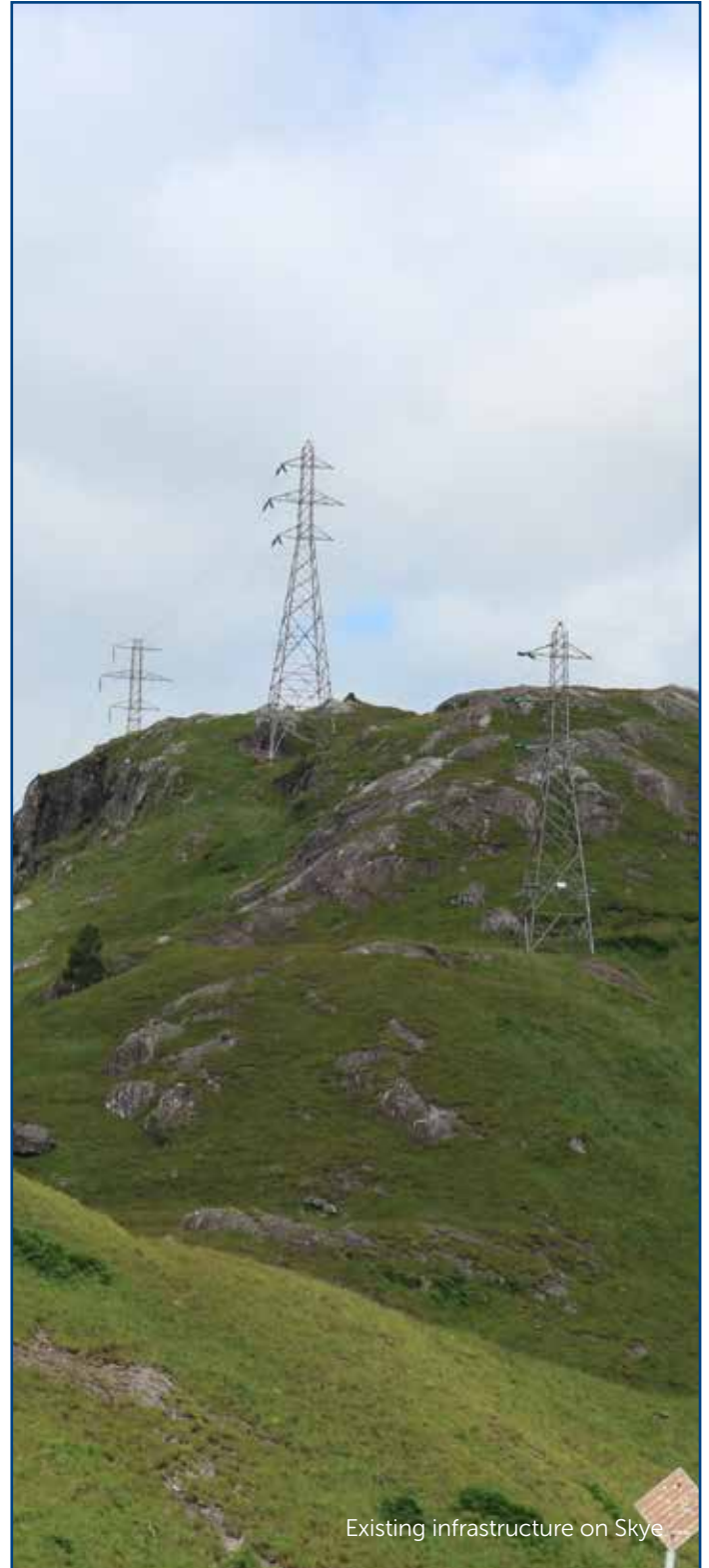
From Fort Augustus substation to Broadford substation, it is proposed to construct a new double circuit 132 kV OHL comprising steel structures. The existing Fort Augustus to Skye Tee 132 kV trident wood pole OHL, and the existing 132 kV steel lattice OHL between Skye Tee and Broadford would be dismantled and removed once the new OHL is operational;

Between Broadford substation and Edinbane substation, the existing single circuit wood pole trident 132 kV OHL would be replaced with a new 132 kV OHL comprising of steel structures. The existing OHL would be dismantled and removed once the new OHL is operational; and

Between Edinbane substation and Ardmore substation, the existing single circuit wood pole trident 132 kV OHL would be replaced with a new higher capacity 132 kV trident wood pole OHL. During construction, the existing overhead line would remain in place and following completion of the new line, the existing will be dismantled.

Localised Mitigation

Underground cable installation requires significant groundworks. Access requirements and effects on habitat therefore have to be considered as a result. Due to the cost of cable technologies and associated substation equipment, it would not be viable to consider these for the entire line route. Instead, they may be considered in short sections in areas of particular sensitivity where they could address specific consenting issues subject to environmental and engineering considerations.



Existing infrastructure on Skye

Technical Solutions to Meet the Project Need

Existing Infrastructure

The existing 132kV overhead line which connects Fort Augustus and Skye consists of four distinct sections, which were constructed at different times over the past 65 years in response to changing needs. These include:

- Fort Augustus to Abercalder - Trident wood pole
- Abercalder to Quoich – Steel lattice towers
- Quoich to Broadford – Steel lattice towers
- Broadford to Ardmore – Trident wood pole

The existing infrastructure is approaching the end of its operational life and a significant capacity increase is required to meet the needs of renewable generators looking to connect. To maintain security of supply and carry the power required to support net zero emissions targets, it has been deemed not feasible to upgrade the existing overhead line infrastructure. As such the existing 132kV overhead lines between Fort Augustus and Ardmore will be replaced.

Please note the Abercalder to Quoich section is presently being replaced with a wood pole OHL due to asset condition. This will ensure continued security of supply from Quoich Power Station and during the construction phase, can act as a temporary diversion for the development.

Edinbane to Ardmore

Less power will be transferred between Edinbane and Ardmore. A new trident H wood pole is suited to the terrain in this area and will be able to carry sufficient power.



Figure 1 An Example of a Trident H wood pole structure

Fort Augustus to Edinbane

The power that can be transported with a wood pole structure is limited. Therefore, multiple overhead lines would be required between Fort Augustus and Edinbane to meet the requirements of the replacement line. In addition, wood poles cannot be used in certain areas due to wind loadings at altitude.

Steel structures are therefore being considered between Fort Augustus and Edinbane.



Figure 2 An example of a Steel Lattice Tower Structure



Figure 3 An Example of a NeST Steel Monopole Structure

Consideration of Route Options

The selection of potential routes brings together work by three main disciplines:



Engineering Team

Who identify engineering constraints and where overhead lines and cables can be installed from a construction and operational perspective;



Environmental Team

Who identify key environmental constraints (aspects) along the routes which the new infrastructure could impact upon; and



Land Team

Who engage with landowners to identify key land use constraints

Identifying Key Environmental Aspects

Key environmental aspects are identified through a mixture of desktop assessment and site surveys. Work undertaken to date on the route options has included detailed mapping of all potential routes and identification of environmental aspects which could constrain the proposed development both physically and in terms of gaining consent.

In addition, a suite of environmental surveys has been undertaken to provide additional baseline information, these covered:

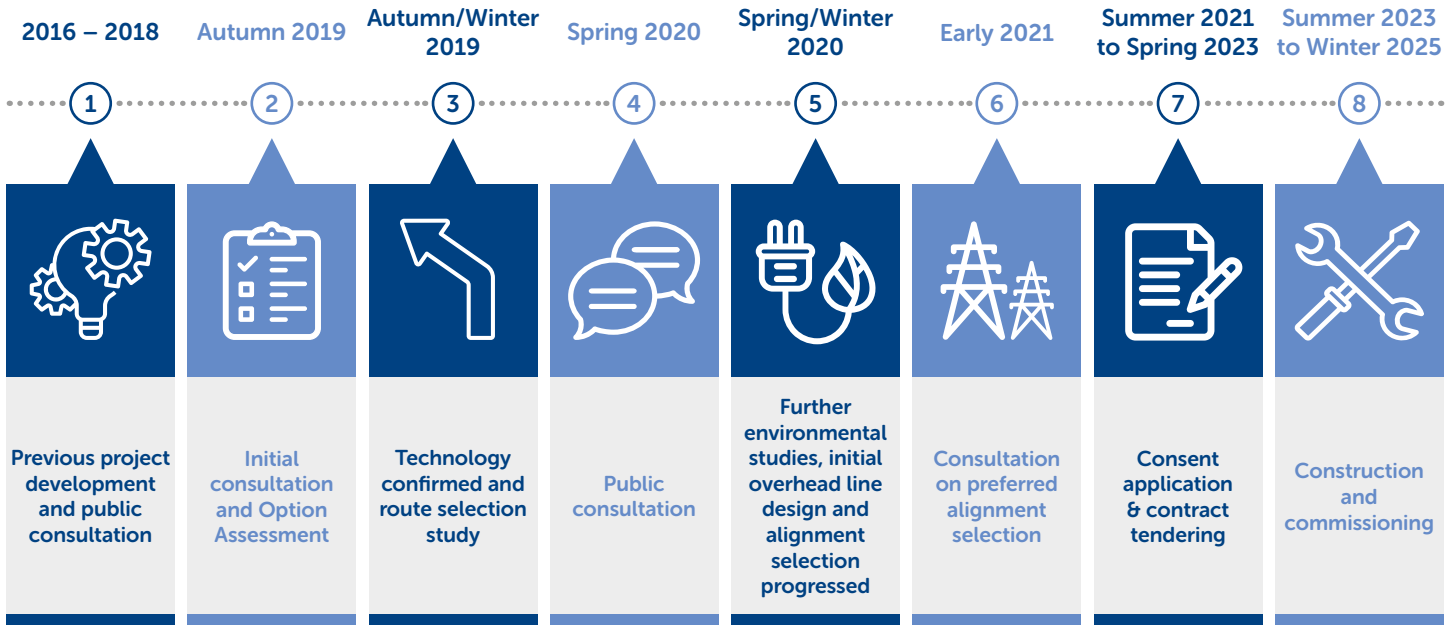
- Landscape and visual walkover survey by landscape architects;
- Cultural heritage walkover survey by archaeologists;
- Bird surveys including for wildfowl, raptors, breeding birds and wintering birds;
- Habitat survey;
- Otter survey; and
- Peat survey

The key environmental aspects that have informed the overhead line routing process include:

- Landscape character and visual amenity aspects;
- Special Protected Areas (SPA), for birds;
- Special Areas of Conservation (SAC), for habitat;
- Sites of Special Scientific Interest (SSSI);
- Local Nature Conservation Sites;
- National Scenic Areas;
- Protected Species and habitats
- Scheduled Monuments;
- Peat / ground conditions



Project Timeline



1 Previous project development and public consultation
 Consultation and development work on a proposed additional overhead line between the Isle of Skye and Fort Augustus. The project driver was to enable renewable generation on Skye to connect to the transmission network. This project was stopped in 2018 to allow for a more holistic and enduring approach to meet future security of supply needs and support the transition to net zero

2 Initial consultation and Option Assessment
 Consultations with key statutory bodies such as Scottish National Heritage, The Highland Council, Historic Environment Scotland and Scottish Environment Protection Agency were undertaken to seek feedback on the project and outline the assessment methodologies used to determine the changes to project need

3 Technology confirmed and route selection study started
 Proposed technology and overhead line corridor (wide area between connection points) identified. Route options identified, options appraisal undertaken and preferred route identified

4 Public consultation
 Route consultation with statutory, non-statutory bodies and communities on initial project proposals. Document detailing scope of consultation to be published

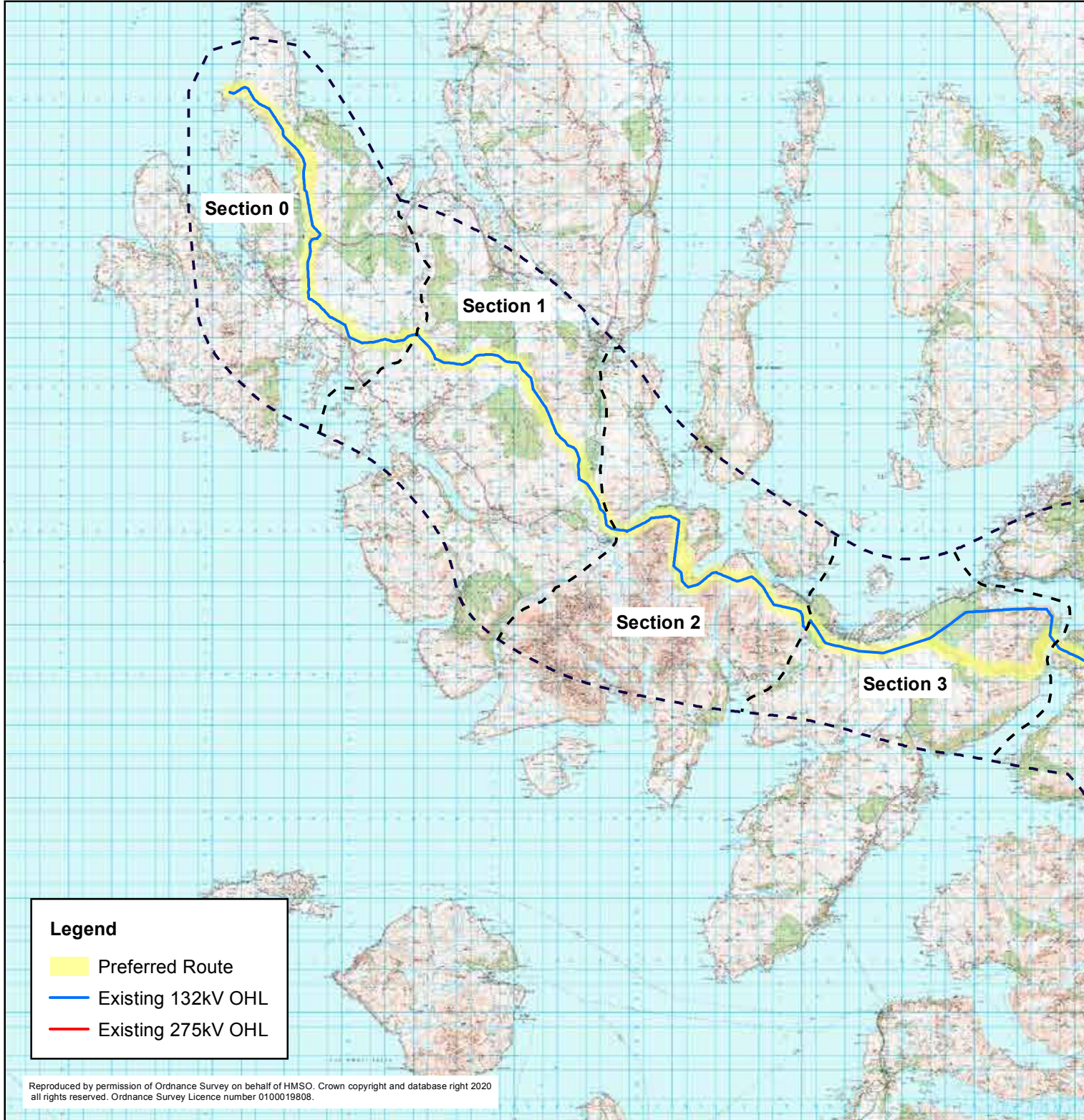
5 Further environmental studies, initial overhead line design and alignment selection progressed
 Review all feedback and publish the Report on Consultation. Confirm the proposed route. Undertake further environmental studies and initial engineering design to identify the preferred alignment for the overhead line. Confirm the preferred alignment for the OHL and establish what structure types will be needed, including for any mitigation informed by early EIA work.

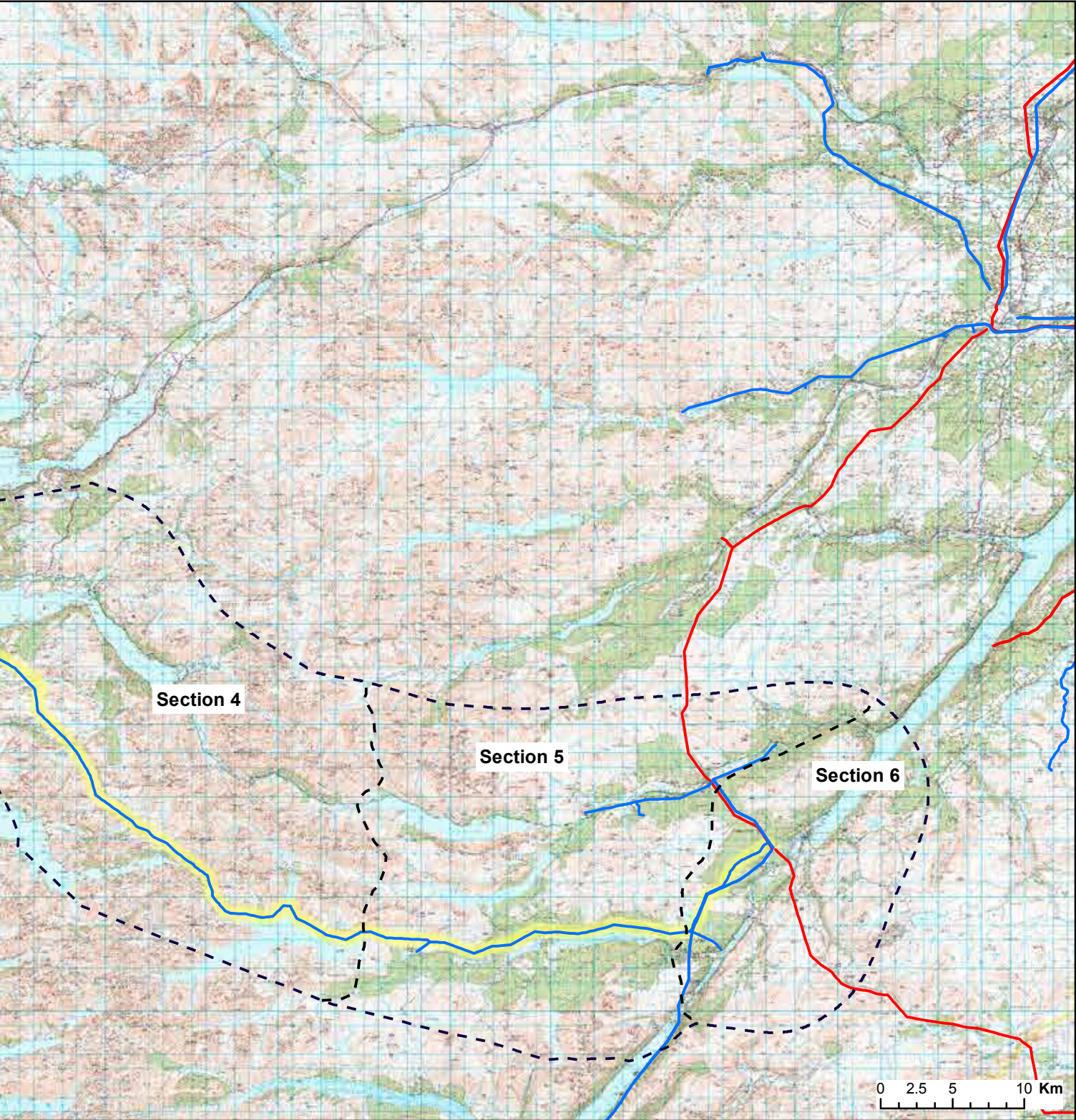
6 Consultation on preferred alignment selection
 Undertake consultation on the preferred alignment for the overhead line and hold further public consultations

7 Consent application & contract tendering
 Confirm the overhead line alignment and design solution, and publish the Report on Consultation. Progress Environmental Impact Assessment (EIA), negotiations with landowners, preparation and submission of Section 37 consent application, contract tendering and procurement detailed design

8 Construction and commissioning

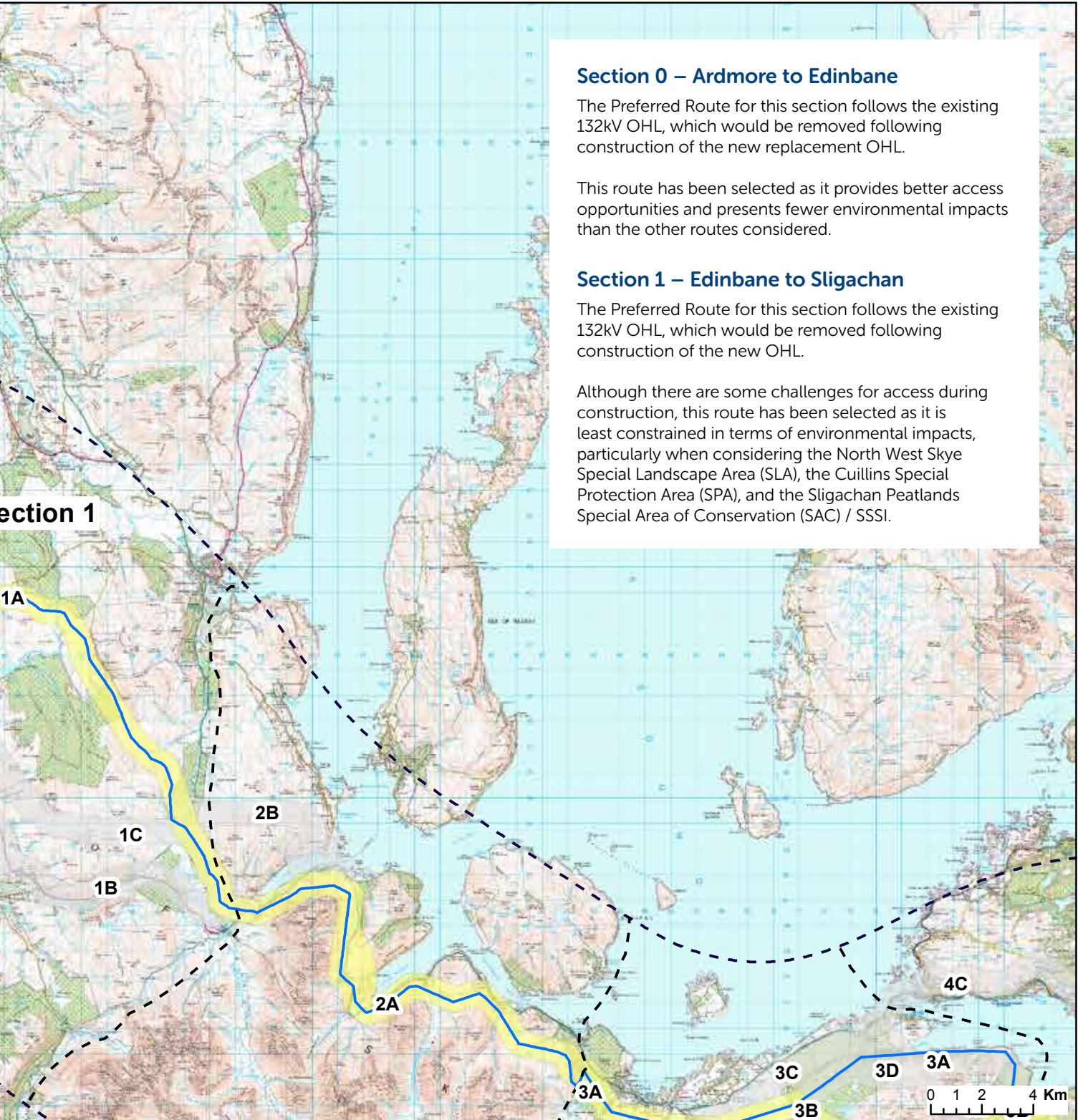
Preferred Overall Route





Preferred Route – Sections 0-1





Section 0 – Ardmore to Edinbane

The Preferred Route for this section follows the existing 132kV OHL, which would be removed following construction of the new replacement OHL.

This route has been selected as it provides better access opportunities and presents fewer environmental impacts than the other routes considered.

Section 1 – Edinbane to Sligachan

The Preferred Route for this section follows the existing 132kV OHL, which would be removed following construction of the new OHL.

Although there are some challenges for access during construction, this route has been selected as it is least constrained in terms of environmental impacts, particularly when considering the North West Skye Special Landscape Area (SLA), the Cuillins Special Protection Area (SPA), and the Sligachan Peatlands Special Area of Conservation (SAC) / SSSI.

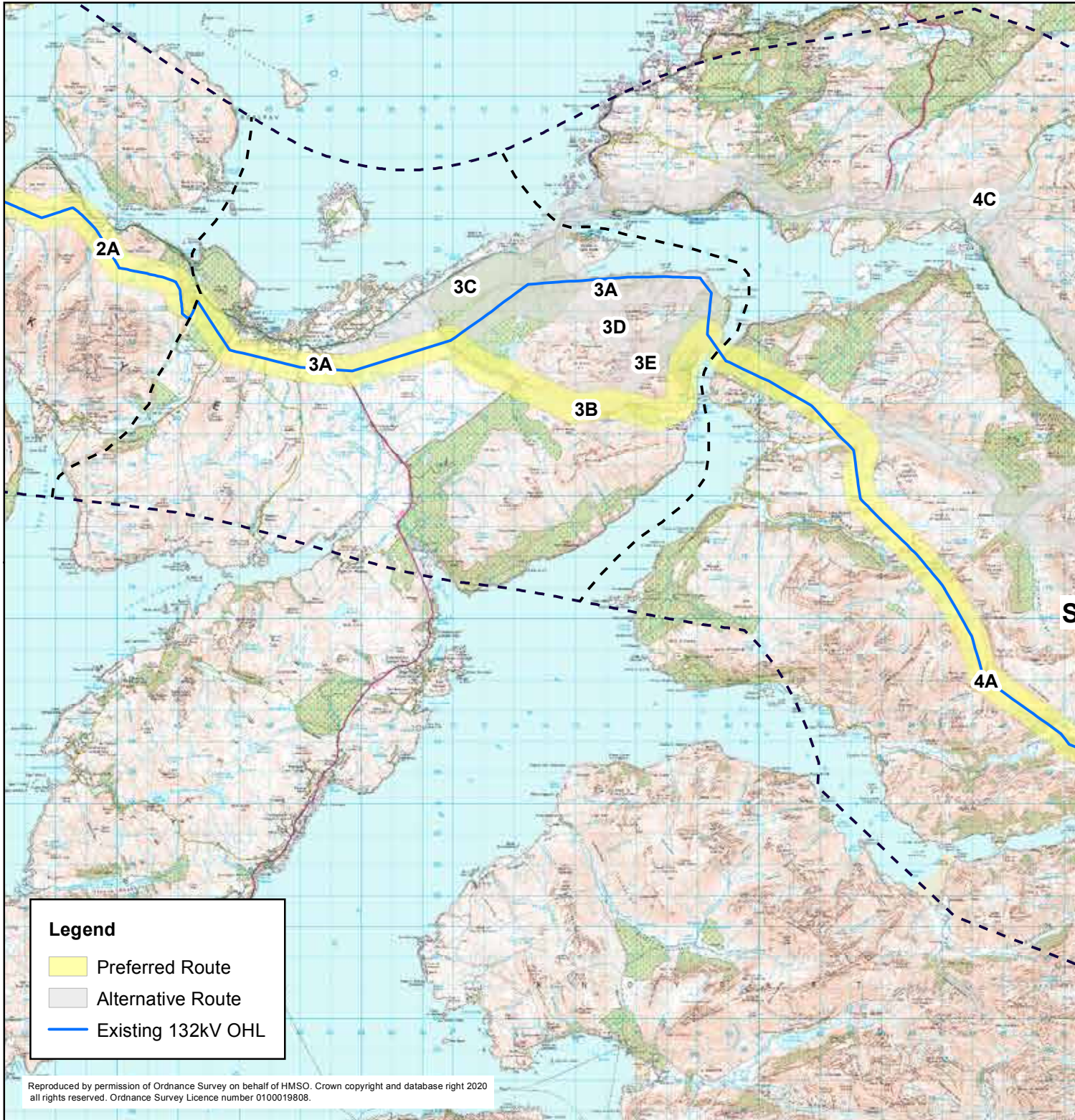
Section 1

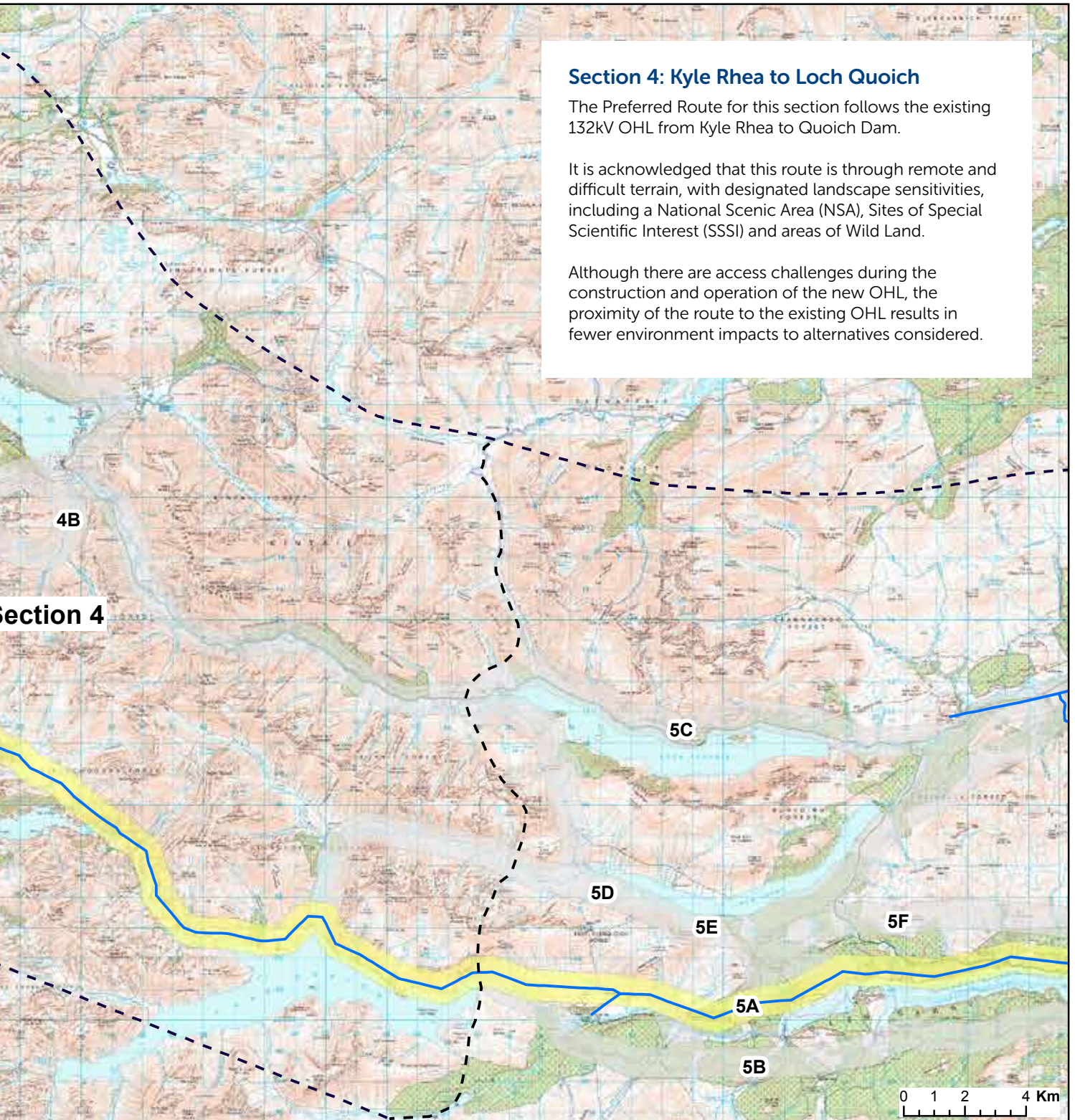
Preferred Route – Sections 2-3





Preferred Route – Section 4





Preferred Route – Sections 5-6

Section 5 – Loch Quoich to Invergarry

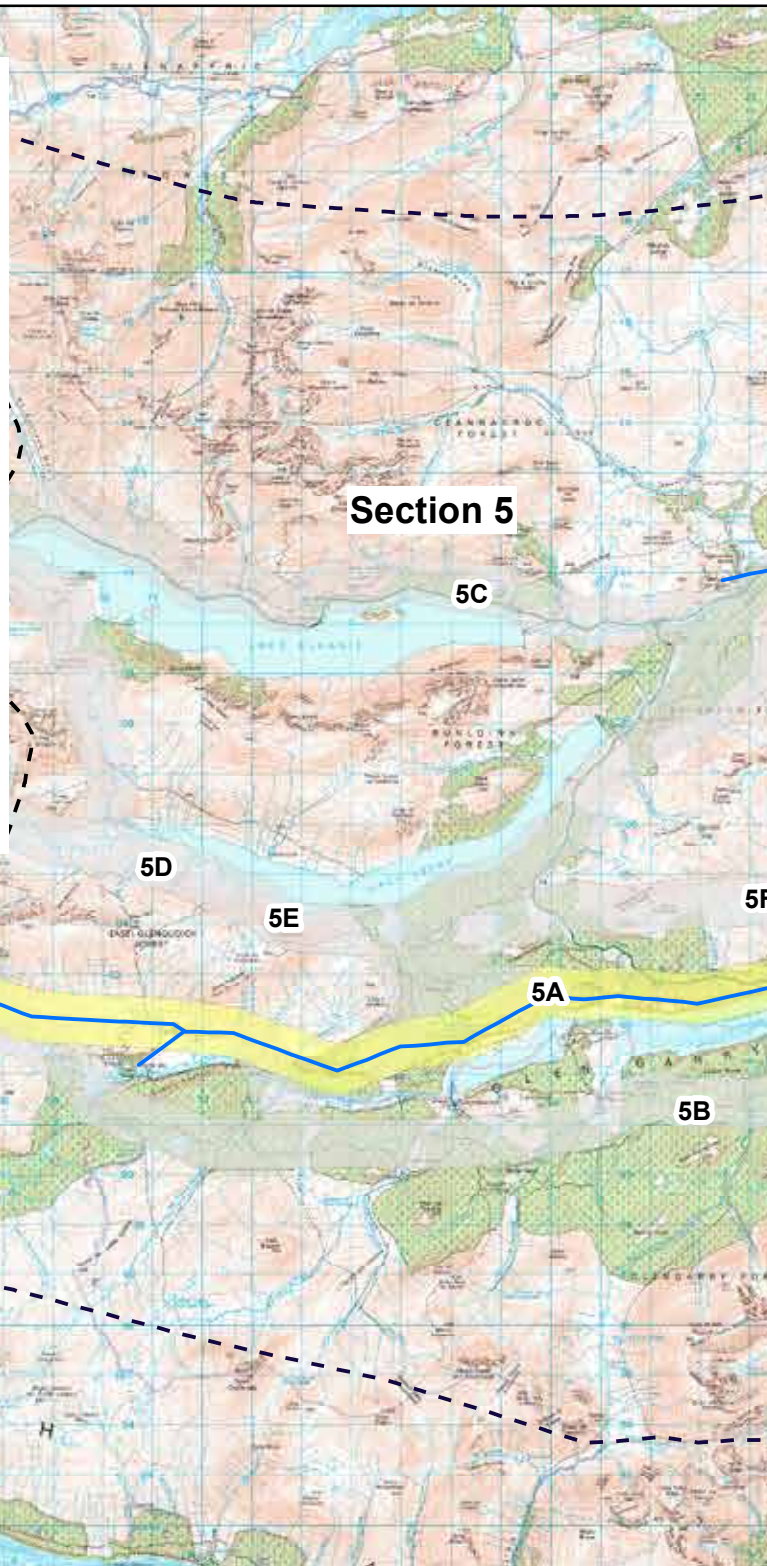
The Preferred Route for this section follows the existing 132kV OHL from Quoich Dam to Invergarry.

This route has been selected as there are fewer landscape and visual sensitivities compared to the other options considered, avoiding any 'novel' impacts to qualifying bird species, in contrast to routes in areas where there is currently no electricity infrastructure.

Section 6 – Invergarry to Fort Augustus

The Preferred Route for this section largely follows the route of the existing 132kV OHL from Invergarry to Fort Augustus substation, deviating from this to the western extent of Inchnacardoch Forest to Fort Augustus substation.

This route has been selected as it avoids Auchterawe, reducing the potential for impacts on visual amenity and landscape character in the area. However, the potential for cumulative effects in the area would require further consideration. All potential options considered would require some removal of forestry to accommodate a new or widened wayleave.



Section 5

5C

5D

5E

4A

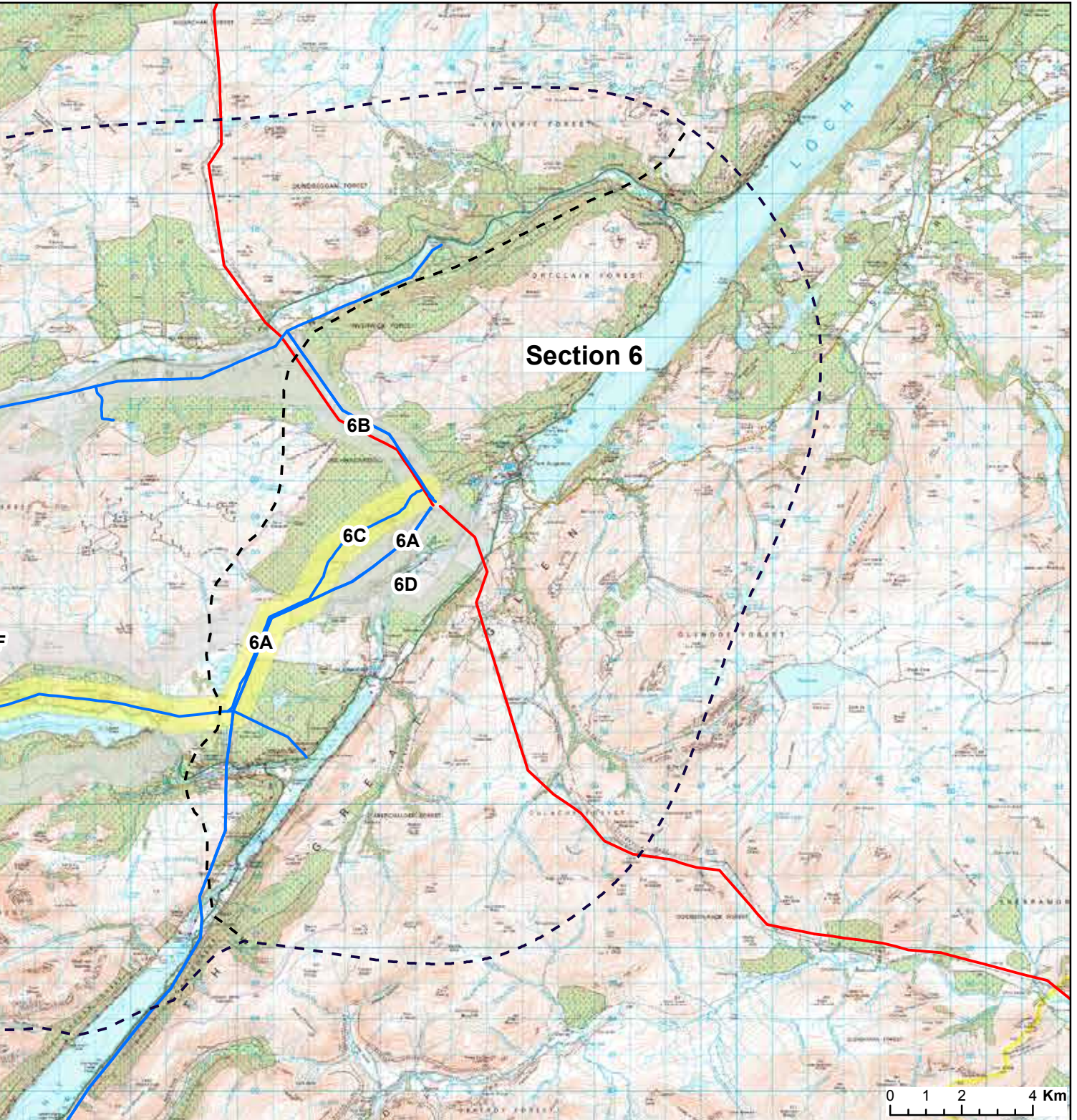
5A

5B

Legend

- Preferred Route
- Alternative Route
- Existing 132kV OHL
- Existing 275kV OHL

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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 explained the change to the need for this Project adequately?
- Have we adequately explained the reasons why the capacity of the line has to increase which will result in changes to the existing infrastructure along its route?
- Have we explained the methodology taken to reassess the preferred route for the new project requirements adequately?
- Are there any factors, or environmental features, that you consider may have been overlooked during the selection of the electricity transmission infrastructure requirements and route reassessment process?
- Do you have any other comments about the project need, transmission infrastructure requirements or preferred route?

Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to Lisa Marchi, Community Liaison Manager. The closing date for this consultation period is **Friday 26 June 2020**.

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

Community Liaison Manager, Lisa Marchi



lisa.marchi@sse.com



07825 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:

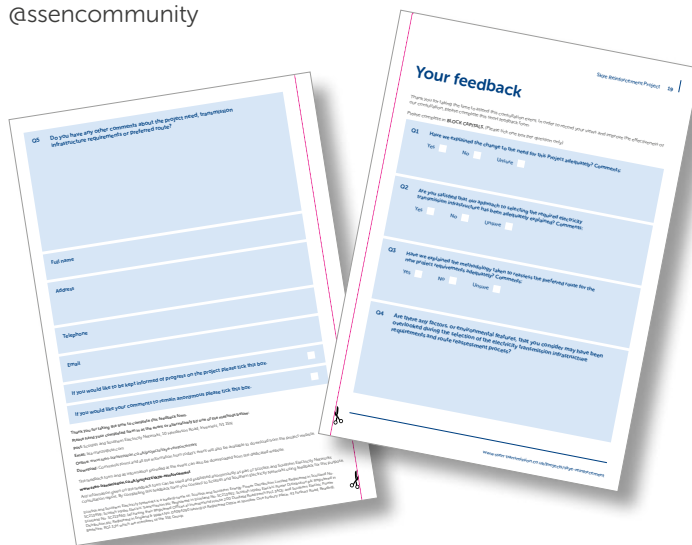
www.ssen-transmission.co.uk/projects/skye-reinforcement

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Your feedback

Thank you for taking the time to attend this consultation event. 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 explained the change to the need for this Project adequately? Comments:

Yes No Unsure

Q2 Have we adequately explained the reasons why the capacity of the line has to increase which will result in changes to the existing infrastructure along its route? Comments:

Yes No Unsure

Q3 Have we explained the methodology taken to reassess the preferred route for the new project requirements adequately? Comments:

Yes No Unsure

Q4 Are there any factors, or environmental features, that you consider may have been overlooked during the selection of the electricity transmission infrastructure requirements and route reassessment process?



Q5 Do you have any other comments about the project need, transmission infrastructure requirements or preferred route?

Full name

Address

Telephone

Email

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

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

Thank you for taking the time to complete this feedback form.

Please hand your completed form in at the event or alternatively by one of the methods below:

Post: Scottish and Southern Electricity Networks, 10 Henderson Road, Inverness, IV1 1SN

Email: lisa.marchi@sse.com

Online: www.ssen-transmission.co.uk/projects/skye-reinforcement

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 at the event can also be downloaded from the dedicated website:

www.ssen-transmission.co.uk/projects/skye-reinforcement

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.

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