

# Inveraray - Crossaig

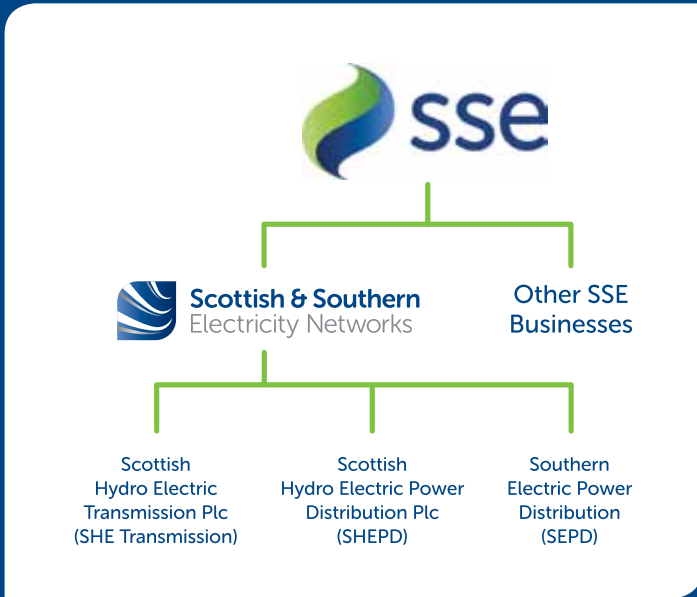
Overhead Line Replacement  
September 2017



**Scottish & Southern**  
Electricity Networks

# Who we are

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



## 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.

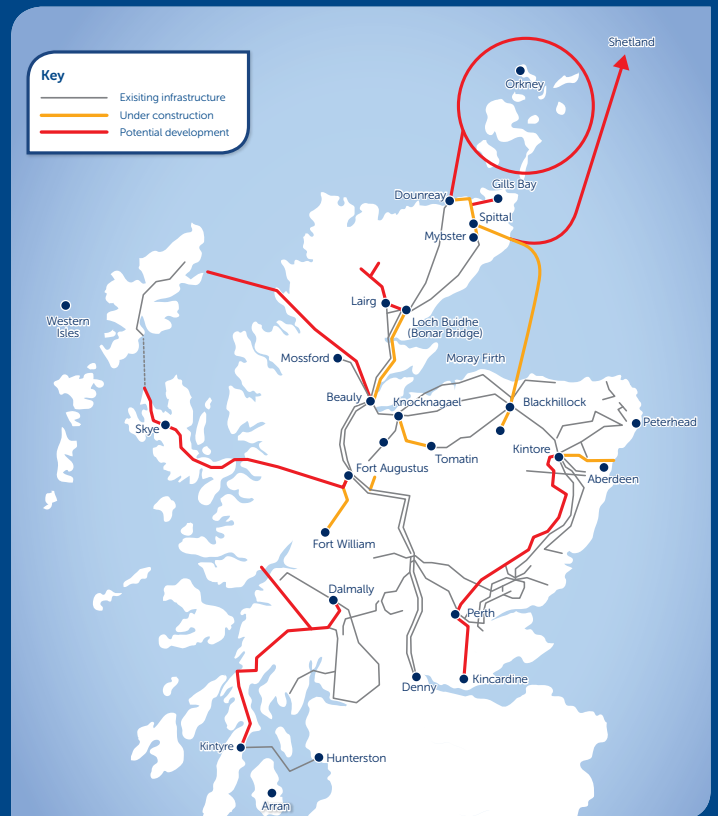
The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link 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.

## 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



# Project Overview

The aim of the project is to reinforce the existing transmission network in Argyll and Kintyre. This will ensure security of supply and improve performance by replacing the aging existing overhead line and which will enable access to the electricity network for generation development and to ensure security of supply.

The main elements of the project are as follows:

- Construction of a new 80km 275kV overhead line, initially operating at 132kV between Inveraray and Crossaig.
- Extend the existing connection from Port Ann to the new overhead line.
- Decommissioning and removal of the existing 132kV transmission line between Inveraray and Crossaig.

In March 2016 the project team consulted on the design and construction of a new substation (Craig Murrail), located between Lochgilphead and Lochgair. The new substation will not be progressed at this time due to current generation requirements.

We will however, be required to retain the connection to the existing substation at Port Ann and design a connection to the new overhead line. This is essential to maintain electricity provision to local communities. This will involve some reconfiguration works within the existing substation as well as extending the existing tower line from Port Ann to connect to the new line.

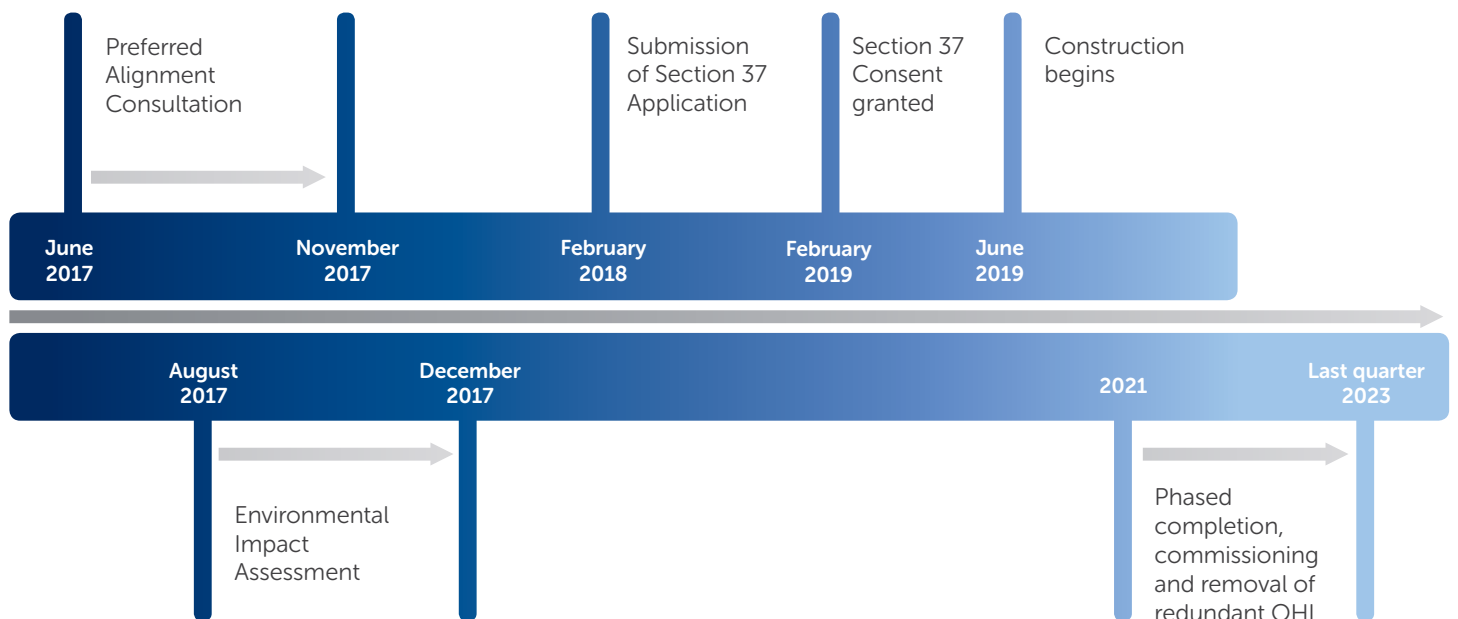
## Consultation on the Preferred Alignment

At a series of consultation events in 2016 Scottish and Southern Electricity Networks presented the preferred route. In the last year our project team have been in consultation with landowners, statutory bodies and specialist consultants to confirm the preferred replacement steel lattice tower line alignment.

The purpose of this consultation is to present our proposal for the replacement overhead line between Inveraray and Crossaig to replace the existing 84km 132kV steel lattice tower line between Inveraray and Crossaig.

Following this consultation we will continue to carry out environmental and technical studies which will form part of our Consent Application (Section 37) to the Scottish Government. Throughout this process we will continue to liaise with consultees.

## Project Timeline



# Environment

The aim of our routing guideline process is to provide a balanced assessment of economic, technical and environmental factors in order to select the preferred alignment for the new overhead line.



## Biodiversity Conservation Sites

Artilligan and Abhainn Srathain Burns Site of Special Scientific Interest (SSSI) are part of Tarbert Woods Special Area of Conservation (SAC) which contains western acidic oak woodland.

The project has been designed to span this site without the need for removal of the oak woodland protected by this designation. Doing so will avoid the need to route the line to the west reducing effects on golden eagles which may breed in this area.

Glen Etive and Glen Fyne Special Protection Area (SPA) designated for breeding golden eagle is 2.28km north of the proposed route alignment, so there is the potential for connectivity with golden eagle as it falls within the territory.

Knapdale Lochs SSSI and SPA which are designated for breeding black-throated diver is 3.20km west of the proposed route alignment, so although it occurs outwith the territory of black-throated diver, our survey data has indicated possible flights of birds from this site crossing the proposed alignment.



## Historic Sites

There are three Scheduled Ancient Monuments (SAMs) in proximity to the project: Auchoish Chambered Cairn; Loch Glashan Dun; and Crinan Canal.

The project crosses the Crinan Canal in a location close to the existing overhead line.

There are three Garden and Designed Landscapes (GDL) in proximity to the project.

The only GDL to be subject to potential direct effects would be Inveraray Castle.

The project remains within this GDL close to the existing overhead line to reduce effects on breeding golden eagles.

The GDLs have substantial woodland cover minimising the number of views from the GDLs. Where views are possible out of a GDL they are generally towards Loch Fyne and not towards the alignment.

## Landscape

The project is to construct a new overhead line and decommission the existing overhead line.

The overhead line route design process has sought to position the new overhead line in a location that improves the landscape and minimises visual effect.

The new overhead line is not anticipated to result in significant effects on the amenity of the settlements between Inveraray and Crossaig, however more detailed assessment will be conducted at Lochgilphead and Tarbert.

## Forestry

Approximately 57km of the project (total length 80km) is located within semi-natural woodland and approximately 7.2km is within areas on the Ancient Woodland Inventory (AWI).

The construction of the project would require the removal of forest cover within the wayleave area, assuming a maximum 40m wayleave on either side of the indicative proposed alignment.

Following consultation with Forestry Commission Scotland (FCS) Woodland Impact Assessments (WIAs) will be completed for each woodland requiring felling as result of the project. The structure of the woodlands may change resulting in a potential loss of woodland area.

The objective is to prevent woodland loss, through the redesign of the existing forest including, for example, the use of designed open space; alternative woodland types; changing the management intensity; or the provision of compensatory planting on an alternative site.



# Technical

## Overhead Line

The proposed 275kV overhead line will replace the existing 132kV overhead line between Inveraray switching station and Crossaig substation, connecting to the existing substations at Crarae, An Suidhe and Port Ann. The existing line will be decommissioned and removed upon completion of the new line

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). On average the existing 132kV towers are approximately 26 metres high with a span of 220 metres, giving a total of 384 towers between Inveraray and Crossaig.

The taller 275kV towers will be on average 46 metres high with an average span of approximately 320 metres. As a result of this, the initial study has shown the total number of towers required could drop to approximately 273, around a 25%-30% reduction.

Initial design has been undertaken to develop an overhead line route that was previously consulted on, focusing on reducing the number of towers and minimising the impact on key environmental areas and local communities.

The next design stage is detailed design developing the proposed alignment.

The images below give an indication of how the proposed towers will look in comparison to the existing towers.



Proposed L8 Suspension Tower



Existing PL16 Suspension Tower

## Substations

### Inveraray and Crossaig

Our existing switching station at Inveraray and substation at Crossaig are at either end of the proposed overhead line. Whilst the overhead line connections are changing, no significant changes are expected within the substation boundaries.

### An Suidhe and Crarae

These small substations facilitate connection of existing windfarms. No significant changes are expected within the substation boundaries.

### Port Ann

We now plan to retain the existing substation, though it will require some reconfiguration.

Due to the changes to the connecting overhead lines, some new switchgear equipment is required.

This will all be located within the existing substation boundary fence and is not expected to be significantly higher than the existing equipment.

### Craig Murrail

Due to changes in current generation demand, there is currently no requirement to build a new substation at Craig Murrail as part of this project.

Substation works are therefore expected to be limited to the existing sites.

## Transport Infrastructure and Construction Methods.

### Access Tracks

Given the nature of the terrain over which the line will cross a variety of construction techniques may be employed including the use of cranes, derricks, helicopters which all have different access requirements.

Our first priority is to utilise existing access routes to minimise disruption with upgrades to existing tracks including the provision of passing places on all tracked routes.

Throughout the construction period the access tracks will be maintained by our contractor to ensure the quality of the access route is maintained.

Some new tracks will be required, as will ground improvements surrounding towers to create safe working platforms for erection works. Additionally areas of temporary metal trackway panels or specialist vehicles may be used depending on the specific ground conditions and bearing capacity.

Helicopter access is proposed for locations where it would be extremely difficult to build access routes for vehicles. This is predominantly in locations at high altitudes. Landowners will be consulted in advance of any helicopter operations.

### Public Routes

The main access road for the majority of the overhead line for delivery of material, plant, equipment and workforce will be taken from the A83 via Inveraray to Tarbert. B roads used during construction will be improved to accommodate abnormal loads and will be maintained as part of our works.

### Traffic Management

A full review will be undertaken to ensure proposed routes are sufficient for the anticipated construction traffic, especially along the B class roads.

Several stone single track bridges along the route may require strengthening works. Where necessary widening of the roads at tight bends may also be undertaken.

Strict timetables for road use by construction vehicles will be agreed and adhered to during construction.

The transport strategy will endeavour to utilise existing routes and tracks already utilised by local forestry operations.

# Overhead Line Replacement

## Inveraray to Minard



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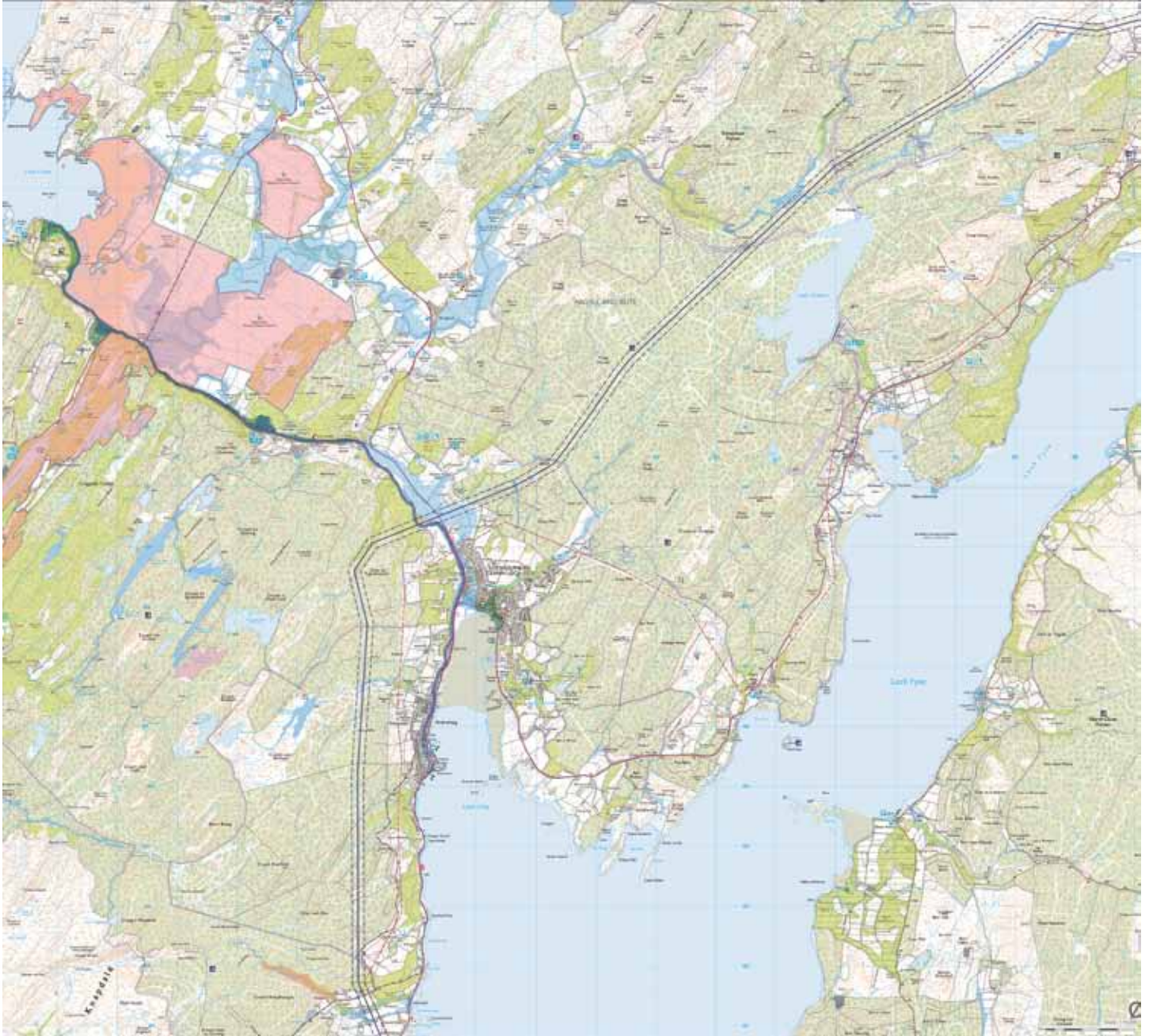


### Key

- Preferred Alignment
- Limits of Deviation (100m)
- Existing Overhead Line
- National Cycle Network Route 78
- Listed Buildings - A
- Listed Buildings - B
- Listed Buildings - C
- Gardens and Designed Landscapes
- Sites of Special Scientific Interest
- Scheduled Ancient Monuments
- Conservation Areas
- Ancient Woodland Inventory
- River Flooding Risk



## Minard to Inverneill



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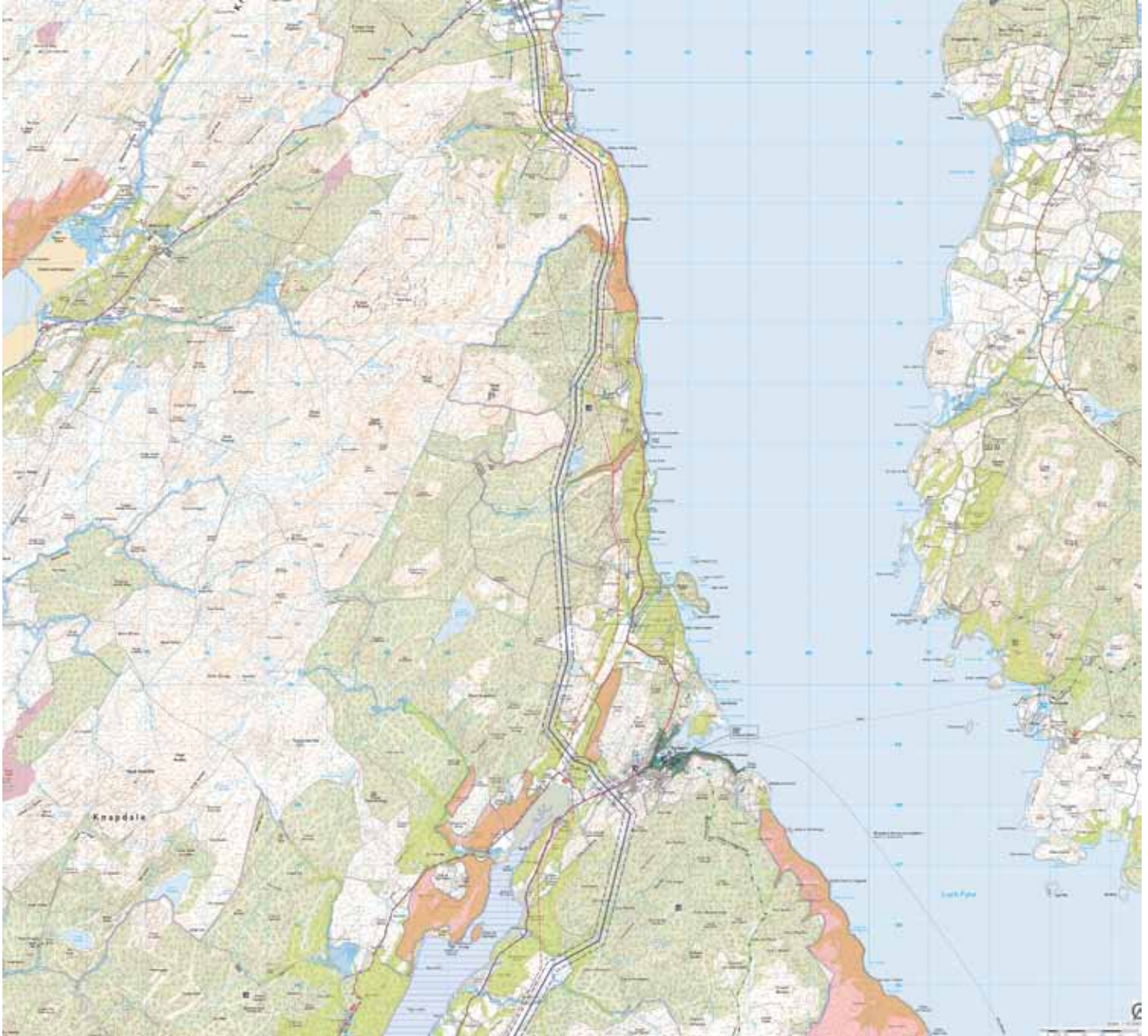
### Key

- |                                 |  |
|---------------------------------|--|
| Preferred Alignment             | Special Areas of Conservation - Candidate  |
| Port Ann Tie Line               | Special Areas of Conservation - Designated |
| Limits of Deviation (100m)      | Gardens and Designed Landscapes            |
| Existing Overhead Line          | Sites of Special Scientific Interest       |
| National Cycle Network Route 78 | Scheduled Ancient Monuments                |
| Listed Buildings - A            | Conservation Areas                         |
| Listed Buildings - B            | Ancient Woodland Inventory                 |
| Listed Buildings - C            | River Flooding Risk                        |



# Overhead Line Replacement

## Inverneill to West Loch Tarbert



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### Key

- |   |  |
|---|--|
| Preferred Alignment                       | Special Areas of Conservation - Designated |
| Limits of Deviation (100m)                | Gardens and Designed Landscapes            |
| Existing Overhead Line                    | Sites of Special Scientific Interest       |
| Kintyre Way                               | Scheduled Ancient Monuments                |
| National Cycle Network Route 78           | Conservation Areas                         |
| Listed Buildings - B                      | Ancient Woodland Inventory                 |
| Listed Buildings - C                      | River Flooding Risk                        |
| Proposed Special Protection Area - Marine |  |



## West Loch Tarbert to Crossaig



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### Key

- |   |  |
|---|--|
|  Preferred Alignment             |  Proposed Special Protection Area - Marine  |
|  Limits of Deviation (100m)      |  Special Areas of Conservation - Designated |
|  Existing Overhead Line          |  Sites of Special Scientific Interest       |
|  Kintyre Way                     |  Scheduled Ancient Monuments                |
|  National Cycle Network Route 78 |  Ancient Woodland Inventory                 |
|  Listed Buildings - A            |  River Flooding Risk                        |
|  Listed Buildings - B            |  |
|  Listed Buildings - C            |  |

# What happens now and how do I have my say?

We understand and recognise the value of 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 been clear in providing the reasons for selecting our preferred route alignment?
- Are there any factors or important points that should be brought to the attention of the project team in regards to the preferred design?

Your views and comments can be provided to the project team by completing a feedback form or by writing to our Community Liaison Manager.

## Feedback

We will be seeking feedback from members of the public until 16:00, Friday 3rd November 2017.

To provide feedback on the proposal or gain further information on the project, either come along to the events or contact our Community Liaison Manager.

Feedback submitted to SHE Transmission plc as part of this pre-application consultation process is not part of the statutory consultation which is being carried out by the Scottish Government. Once an application for consent has been submitted, there will be an opportunity for the public to make formal representations to the Scottish Government before it takes a decision.

## Get in touch with our Community Liaison Manager: Neil Anderson



neil.anderson@sse.com



07500 912 506



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SHE Transmission  
Inveralmond House  
200 Dunkeld Road  
Perth, PH1 3AQ



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

## Information

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

### Project Website:

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

### Find us on Facebook:

SSEN Community

### Follow us on Twitter:

@ssencommunity





## Your Comments

We are keen to receive your views and comments in regards to the following questions:  
Please complete in **BLOCK CAPITALS**. (Please tick one box per question only)

**Q1** Have we been clear in providing the reason for selecting our preferred route alignment?

Yes  No  Unsure

**Q2** Have we explained the approach taken to select the preferred alignment adequately

Yes  No  Unsure

**Q3** Are there any factors, or important points that should be brought to the attention of the Project Development Team in regards to the preferred route alignment?

Comments

**Q4** Following review of the provided information, how would you describe your understanding of the Inveraray - Crossaig project?

I am very well informed  Know a lot  Know a little  
 Know very little  Know nothing at all



**Q5 Overall, how would you describe your reaction to the Inveraray - Crossaig project?**

Support  Neither support or object  Object

**Q6 And finally, from your experience to date, can you rate the quality of the consultation undertaken on the Inveraray - Crossaig project**

Excellent  Quite good  Neither good not poor  
 Poor  Very poor

**Please write in any further comments you would like to make about the engagement process as a whole.**

**Full name**

**Address**

**Postcode**

**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.**

**Which event did you attend?**

Inveraray  Tarbert  Carradale  
 Ardrishaig  Skipness

**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:** Neil Anderson, SHE Transmission plc, Inveralmond House, 200 Dunkeld Road, Perth PH1 3AQ **Email:** neil.anderson@sse.com

**Closing date for feedback is 16:00, Friday 3rd November 2017**

The feedback form and all information provided at the event can also be downloaded from the dedicated website:  
[www.ssen-transmission.co.uk](http://www.ssen-transmission.co.uk)

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.

