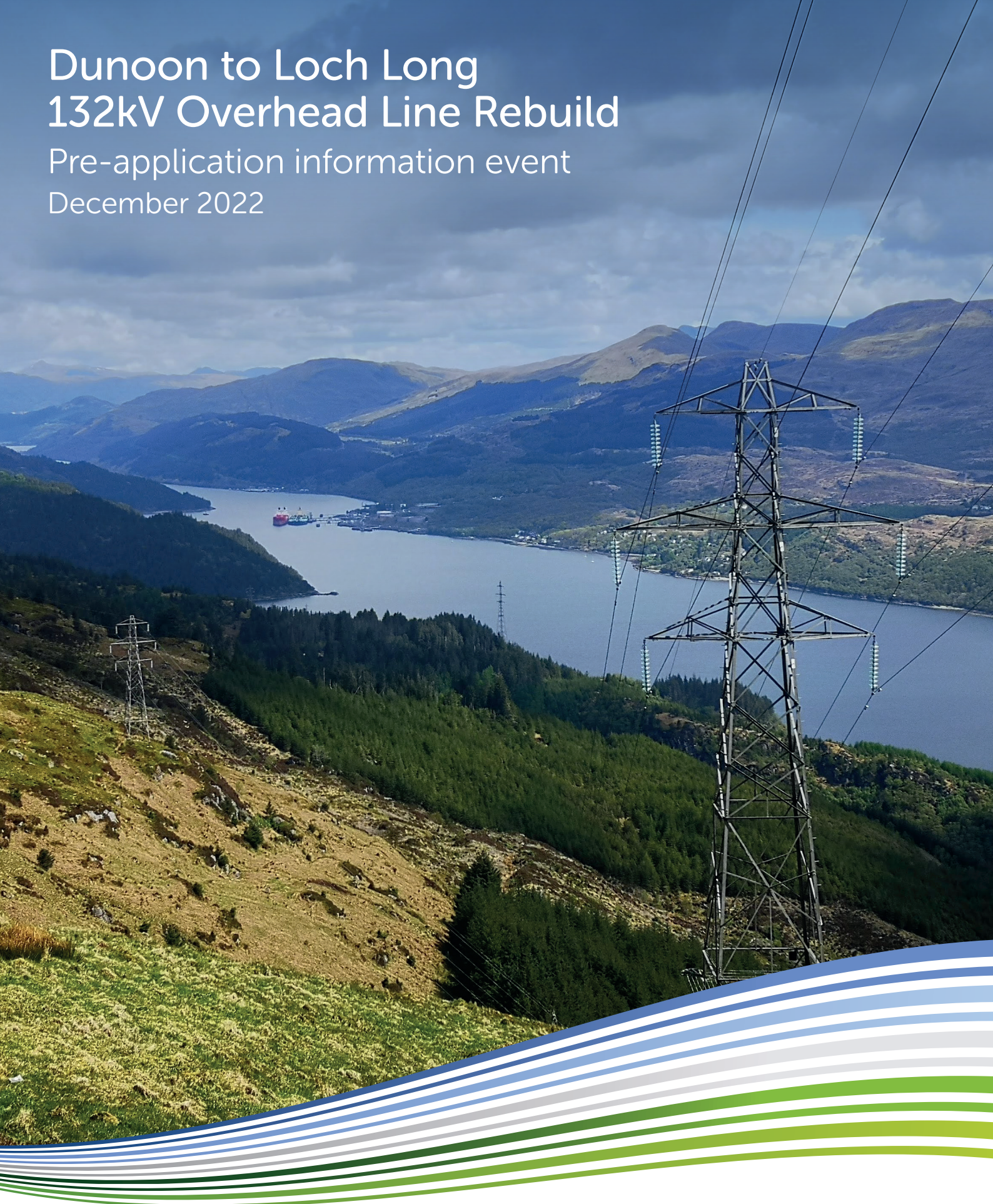


# Dunoon to Loch Long 132kV Overhead Line Rebuild

Pre-application information event  
December 2022



**Scottish & Southern**  
Electricity Networks

TRANSMISSION



# 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?

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 lines, underground cables and subsea cables. Our 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.

## Overview of Transmission Projects

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.

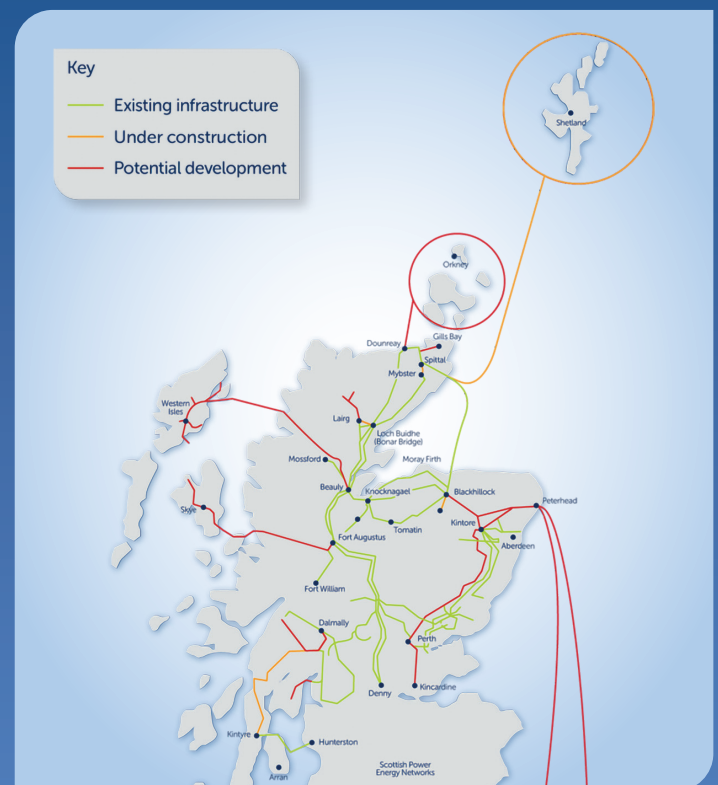
Our network crosses some of the UK’s most challenging terrain—including circuits that are buried under the seabed, are located over 750m above sea level and up to 250km long.

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.



# Project overview and timeline

The aim of the Dunoon overhead line (OHL) rebuild project is to rebuild the existing transmission network servicing Dunoon, in Argyll and Bute. The electricity towers and OHL between Dunoon substation and Garelohead (approximately 16 kilometres) are now coming towards the end of their operational capabilities and are required to be replaced. The line passes over some very steep and arduous terrain and has a very high fault rate associated with it during high winds. This is due to the design of the towers used in the original build.

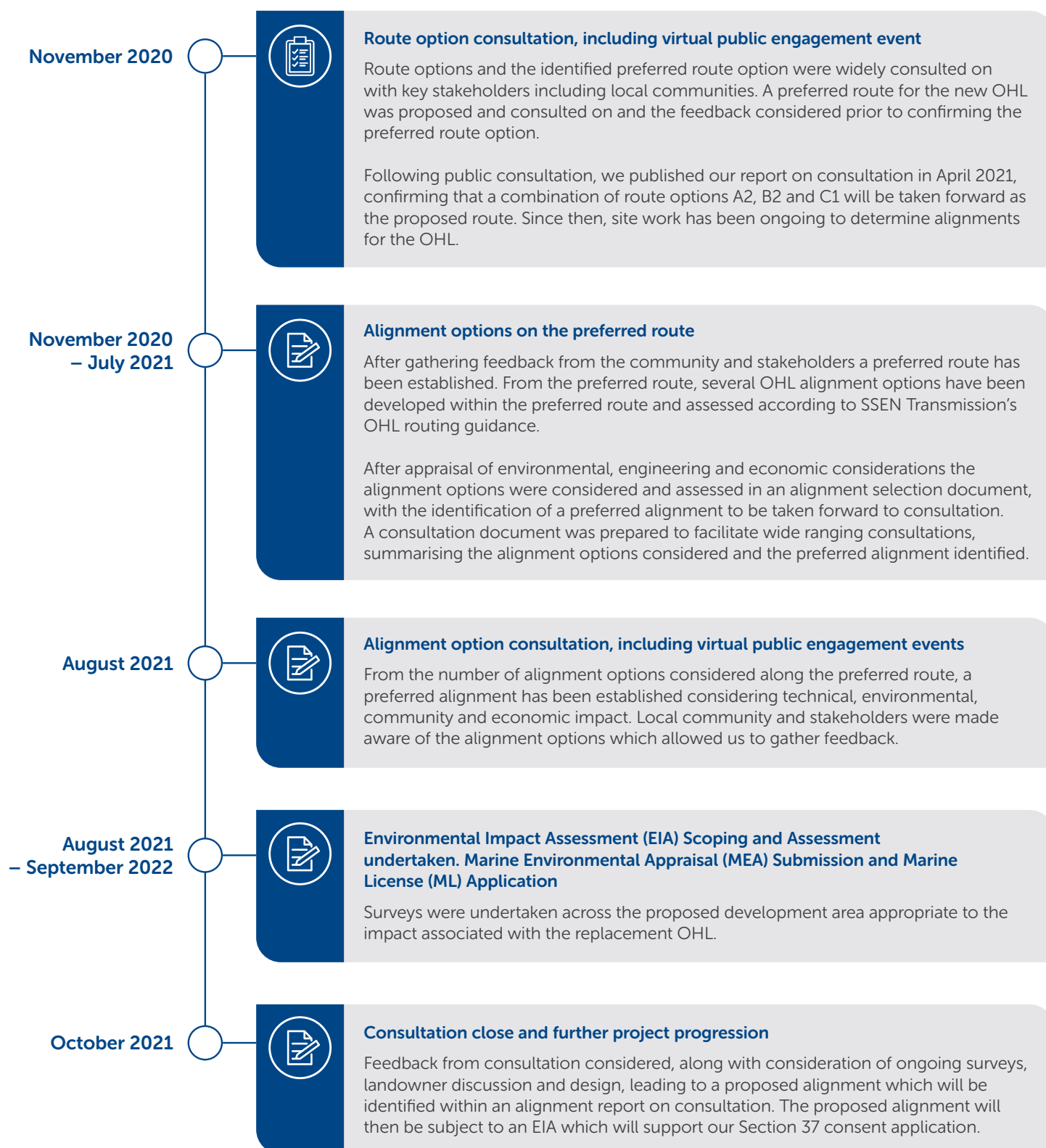


Associated with a previous windfarm connection request (no longer being pursued due to the windfarm failing to get consent) we undertook a capability study of the OHL to see if it is suitable for upgrading with larger conductors (the wires which carry the current). The outcome of this study was that almost half of the towers were not in a satisfactory condition and were unsuitable for modification to resolve ground clearance and fault issues. In order to ensure security of supply, a replacement OHL will be constructed. Once the new OHL is constructed and in service the existing line will be dismantled and removed.

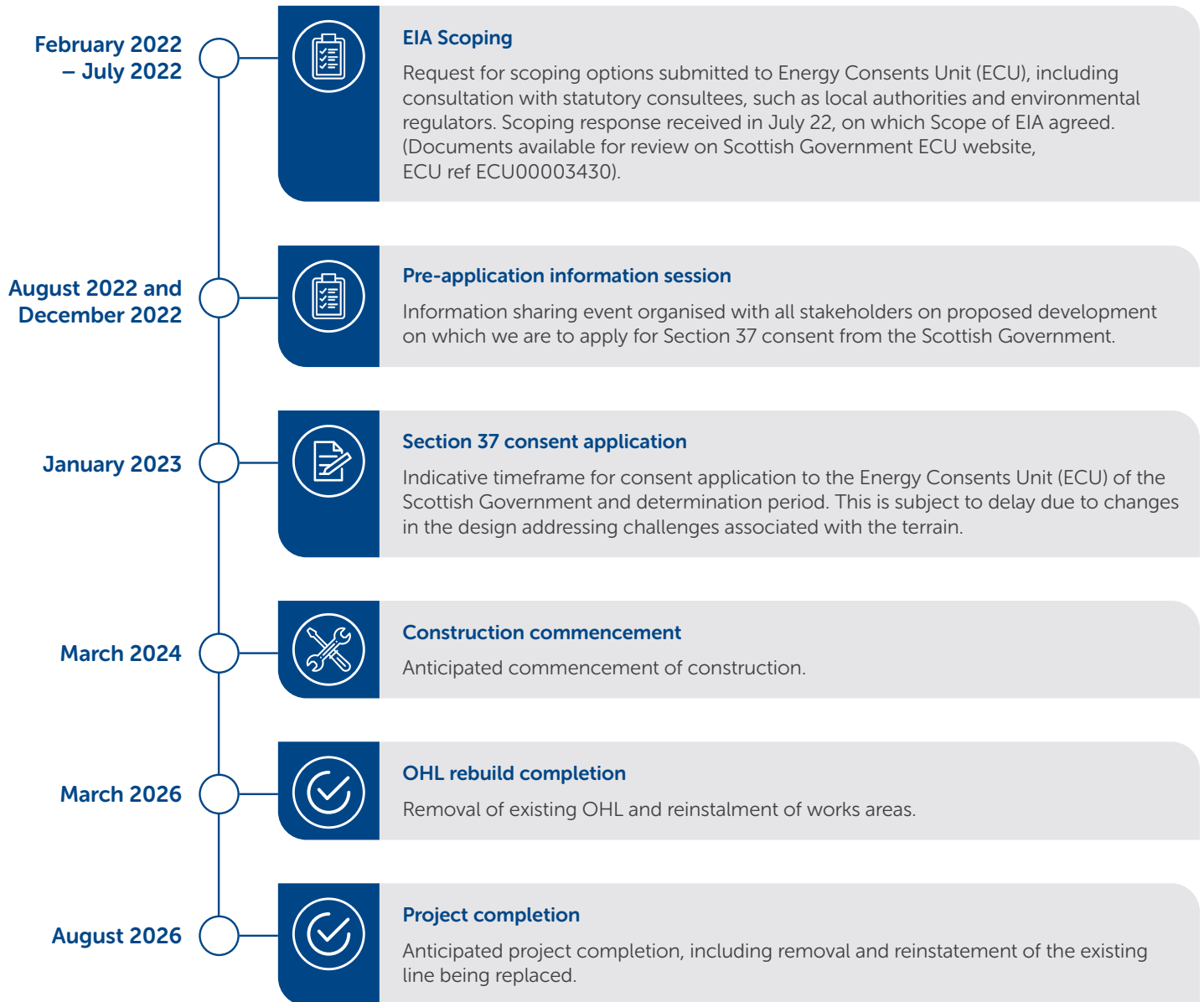
## The main project elements are as follows:

- Construction of a new 132kV OHL from North Ardentinny to Dunoon substation located near Sandbank.
- Reconductoring of the Loch Long crossing.
- Decommissioning/removal of the existing 132kV OHL from Ardentinny to Sandbank.
- Associated tie in works at Dunoon substation will also be required.

# Project timeline







# Planning application

During the rebuild of the replacement OHL we are required to maintain electricity supply to Dunoon which the 132kV transmission line provides, and therefore we need to rebuild the OHL on an alternative alignment to the existing route. As such, we will require a new Section 37 consent from the ECU of the Scottish Government.

This project consulted for both the route selection and alignment optioneering stages of development.

During these consultations we consulted with key consultees both statutory and non-statutory. We engaged with local communities to update them on the development of our proposals and to share considered route options and subsequent alignment options and the preferred alignment.

As part of this process we listened to feedback and adjusted our proposals where possible to accommodate highlighted concerns. We have identified a proposed alignment for the replacement OHL on which our consent application will be based, subject to completion of an EIA and securing of required land agreements.

During the consenting process there is a formal advertising of the application with opportunity for representation to be made on the application. 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 direct.





# Our proposed alignment

**Our preferred alignment was consulted on in August 2021. Following feedback received from stakeholders we carefully considered changes to the alignment to address sensitivities and concerns as far as practicable.**

The feedback we received in August 2021 meant changes were made to the alignment around the Ballochyle area to reduce impacts and address concerns raised by community representatives, residents and landowners.

**Concerns that were raised included:**

- Potential impacts on private water supplies,
- Proximity to residential receptors,
- Local visual impacts,
- Wider landscape impacts and
- Impacts to forestry and habitats.

Through several iterations, a carefully considered solution which we regard to significantly addresses these sensitivities has been derived and is now presented as our proposed alignment.

As part of our early contractor involvement engagement works we have engaged with a preferred bidder Omexon Morgan Sindall Infrastructure (OMSI). OMSI who have helped refine our proposed alignment and are developing plans on how to construct the replacement OHL over the challenging and sensitive terrain the route passes.

During this process the requirement of the formation of access tracks is being fully considered. However, in the upland area of northern section the constructability poses ongoing challenges.

These have led to alternative options being considered which would require crossing the existing OHL twice, enabling a section of the OHL to come off to the north of the crossing whilst still avoiding sensitive habitats lower in Glen Finart (which are located east of the existing OHL), and enable the proposed alignment to tie in to the replacement of the OHL through Glenfinart.



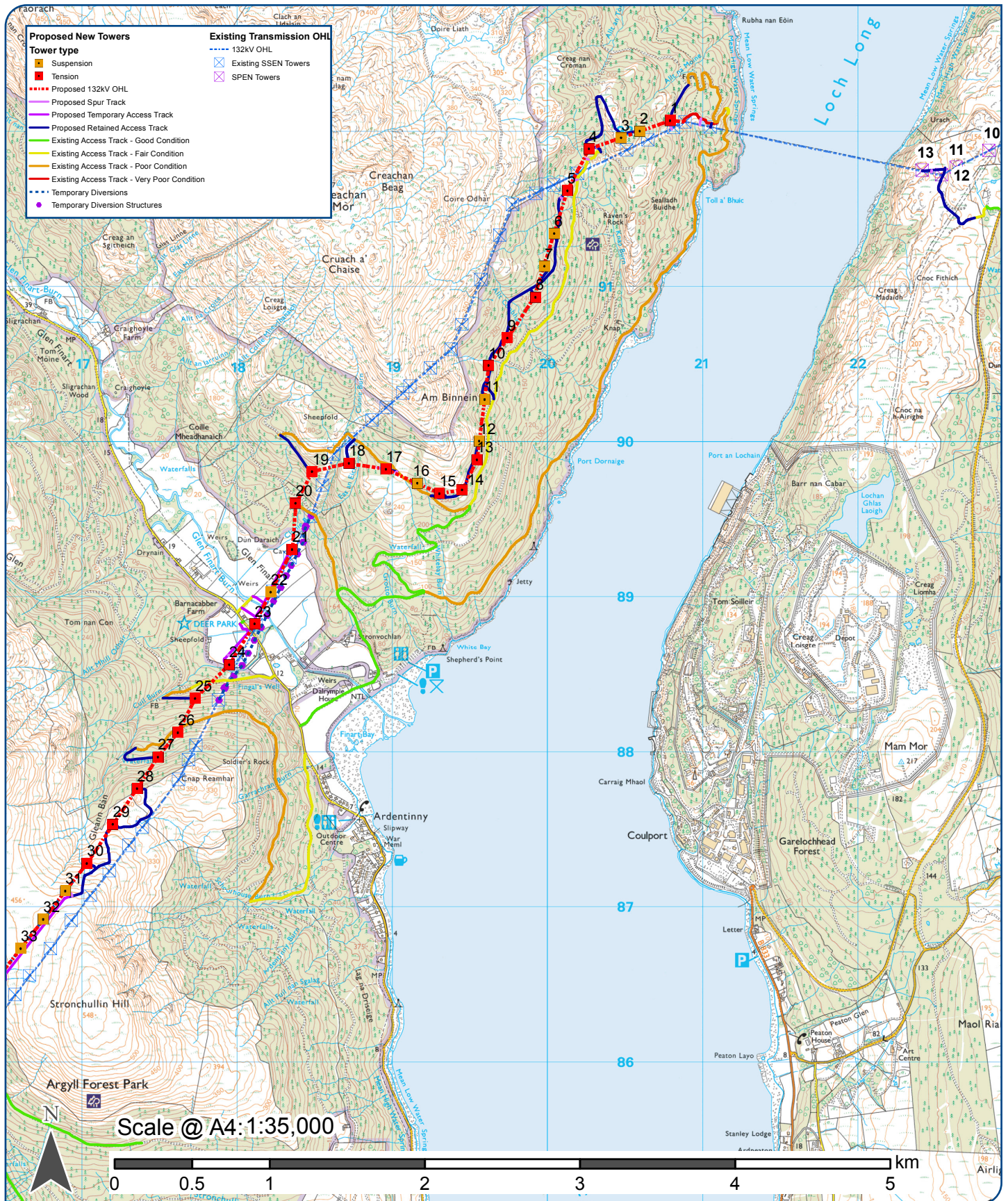


# Our proposed alignment



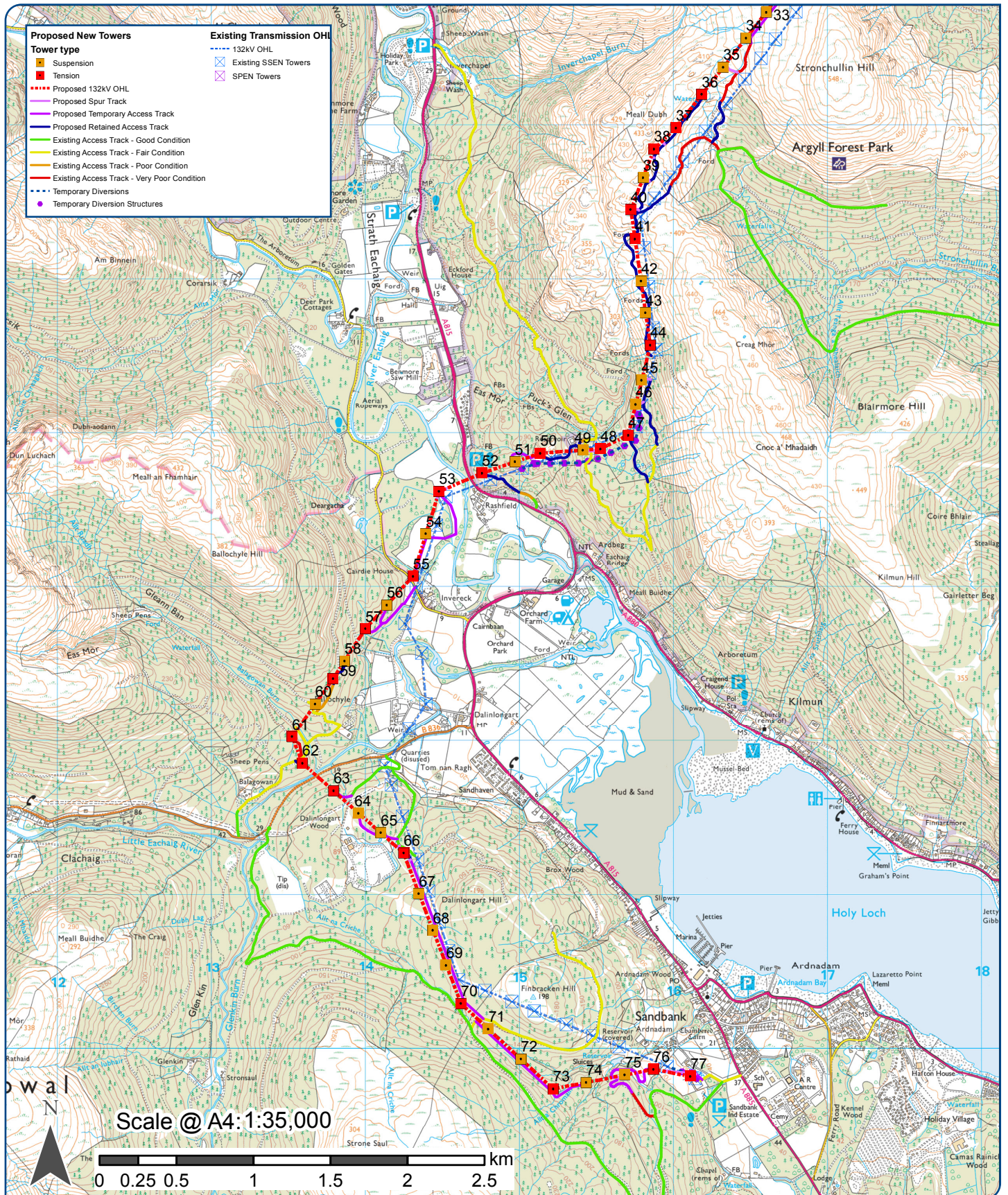


# North section





# South section



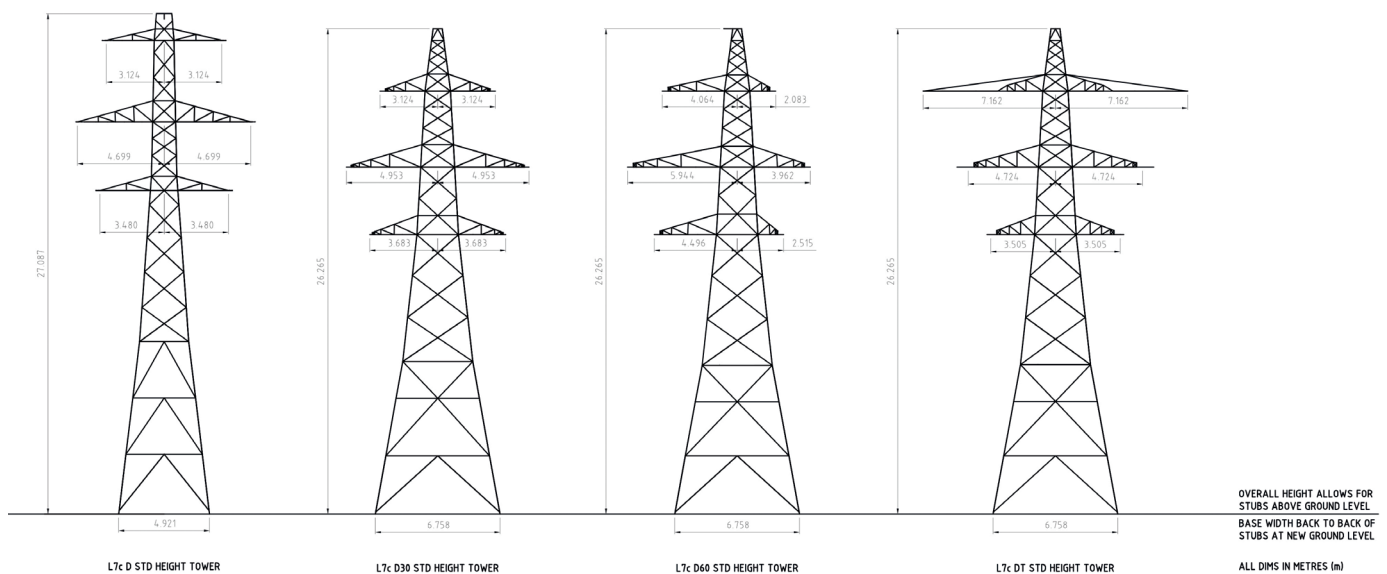


# Project details

To the east of the Loch Long crossing the OHL is within Scottish Power Energy Networks (SPEN) licensed area.

As part of the rebuild project, we are proposing to re-conductor (replace the wires which carry current on the line) the Loch Long crossing and refurbish the towers and replace the fittings on the existing towers at either side of the crossing.

We are also required to replace the earth wire (the middle, tallest conductor, which provides lightning protection to the OHL of the Loch Long crossing). This will be replaced with optical ground wire (conductor including fibre optic strands).



Double circuit L7c steel lattice towers have been identified as the preferred structure to be used for the rebuild, based on our technical, cost and environmental assessments.

The height of these structures is generally between 26-39m depending on the topography and the extensions required to meet required electrical clearance, the tallest structure on the proposed replacement OHL is approximately 39m. The average span is anticipated to be approximately 230m, although some spans may require to be shorter in steeper and uneven terrain.

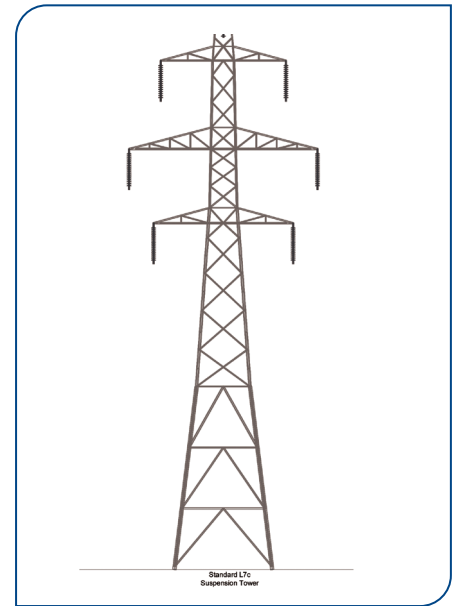
Approx 17.5km long

Will operate at 132kV voltage

23-39m in height

77 towers approx

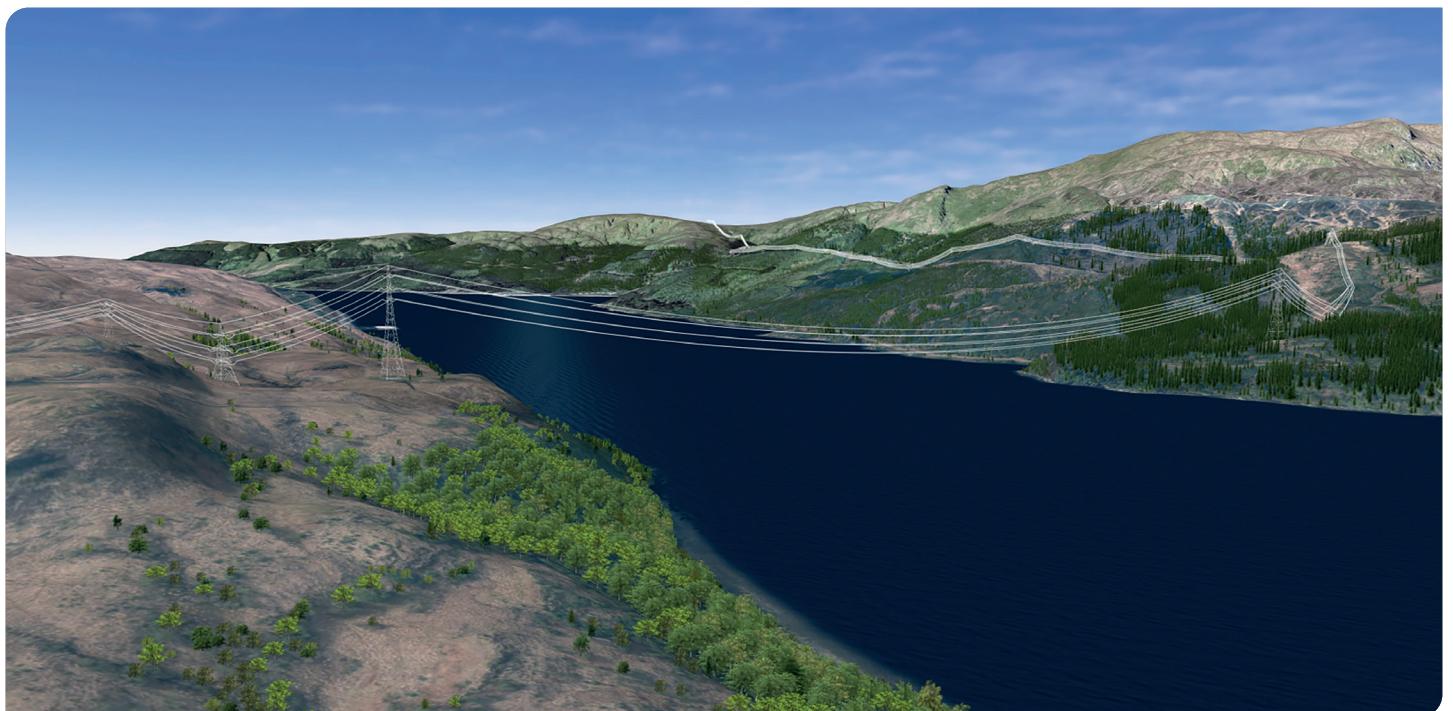
Average Span 230m



**The four existing steel lattice crossing and anchor towers either side of the Loch Long crossing will not be replaced as part of the proposed works. Instead, the existing conductors and fittings will be replaced, as well as strengthening the four towers to extend their lifespan for a further 50+ years.**

Through the commissioning of a focused and robust 'Vessel Traffic Study' and further consultation with Marine Scotland, Peel Ports and the Queen's Harbour Master Clyde (QHMC) SSEN Transmission will ensure that adequate air draft clearance is maintained to leave the crossing unconstrained to current users and likely future users. Further assessments are now being undertaken to assess how the reconductoring methods being considered (e.g. aerial or marine) will impact the environment, other sea users, as well as safety and navigation.

Marine environmental consultants are now in the process of completing a marine environmental appraisal to support a marine licence application to Marine Scotland to consent the Loch Long crossing reconductoring works. A draft marine works licence application to Peel Ports, whose harbour authority area the Loch Long crossing is located, will be submitted in the coming months, with a final Works Licence applied for 12 months prior to reconductoring works commencing on the Loch Long crossing.





# Engineering and marine considerations

The existing double circuit towers operate at a voltage of 132,000 volts (or 132kV), which is the lowest transmission voltage on the Scottish network. The proposed replacement line will operate at this same voltage but will provide increased capacity proving an element of future proofing.

To achieve the necessary capacity requirements, various technology options were considered. Several methods of OHL supports have been used throughout the history of the UK's transmission network and as the usage and design parameters for these varies greatly, it was necessary to filter down the number of supports to be assessed.

Based on pre-selection criteria, which included visual impact considerations, electrical clearance requirements and a requirement to support 132kV operation, we have identified that the L7c type steel lattice structures would best suit the project to replace the existing outdated design of metal lattice towers (PL16 type).

The L7c types of towers are slightly taller in height, which allows for longer spans and thus fewer structures to be used, depending on the terrain. Metal lattice towers are considered less visually prominent at distance when the line is back clothed against the terrain. Metal lattice towers are also well established proven technology which is important in the context of proving Dunoon a safe and secure supply for the future.





# Environmental impacts

The approach to alignment selection, in identifying and assessing alternative OHL routes, is informed by SSEN Transmission's routing guidance. By following the guidance, SSEN Transmission has ensured compliance with 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.
- 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.

Main identified environmental constraints along the existing OHL and the preferred alignment are shown in the map below.

## Proposed alignment showing key environmental designations





# Designated and protected sites

## National park

The majority of the existing OHL and proposed replacement will be within the Cowal Peninsula area of the Loch Lomond and Trossachs National Park.

National parks are Scotland's only statutory landscape designation. The four purposes of National Parks in Scotland (in the National Parks (Scotland) Act 2000) are to:

- Conserve and enhance the natural and cultural heritage.
- Promote sustainable use of the natural resources.
- Promote understanding and enjoyment of the areas special qualities.
- Promote sustainable social and economic development of the areas communities.

Loch Lomond and Trossachs National Park encompasses some of the finest scenery in Scotland. It is a place of contrasts, from rolling lowland landscapes in the south to high mountains in the north, and has many lochs, rivers, forests and woodlands.

It is also a living, working landscape which has been influenced by people for generations and is visited and enjoyed by many for its recreational value.

## Sites of Special Scientific Interest (SSSI)

SSSIs are protected areas of nationally important qualifying features, regulated and protected by NatureScot in Scotland. They are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations.

They are areas of land and water that are considered to best represent our natural heritage in terms of their: flora—i.e. plants, fauna—i.e. animals, geology—i.e. rocks, geomorphology—i.e. landforms, or a mixture of these natural features. There are two SSSI in relatively close proximity to the proposed OHL rebuild:

- Loch Eck located at the top of Strath Eachaig is a biological SSSI of importance for its outstanding fish community which is believed to be one of the most natural remaining in Britain. Other qualifying features (to fish population) includes the oligotrophic loch habitat, flood plain fen and bryophyte assemblage.
- Craighoyle Woodland located in Glen Finart is biological SSSI rich in oceanic (or Atlantic) bryophytes and this is due, in part, to the mild, humid climate of this region. Designated for its Bryophyte and Lichen assemblages.

## Garden and designated landscapes

The inventory of gardens and designed landscapes in Scotland is a listing of nationally important gardens and of artistic and/or historical significance, in Scotland.

The inventory was originally compiled in 1987, although it is a continually evolving list maintained by Historic Environment Scotland. Gardens and designed landscapes are grounds consciously laid out for artistic effect which are an important element of Scotland's historic environment and landscape, playing a big role in our heritage.

Benmore (Younger Botanic Gardens) garden and designed landscape is located at the south end of Loch Eck, in Strath Eachaig, noted as a botanic garden with an exceptional plant collection dispersed throughout woodland gardens, shrubberies, an arboretum and pinetum, formal and walled gardens set within the well-established structure and dramatic scenery of surrounding forest, woodland and parkland.

## Scheduled monument

A scheduled monument in Scotland is a nationally important archaeological site or monument which is given legal protection by being placed on a list (or "schedule") maintained by Historic Environment Scotland.

In Glen Finart, there is Dun Daraich fort, scheduled monument site—the monument comprises a fort of later prehistoric and early historic date, visible as very well-preserved upstanding remains. The monument occupies a rocky knoll which rises, vertically in places, from the level flood plain of the Glen Finart burn, close to the seaward end of Glen Finart.

## Ancient woodland/semi natural woodland

There is extensive areas along the replacement OHL which are shown on Ancient Woodland Inventory (suggesting long established woodland) and also shown on semi-natural woodland and near native woodland inventories.

These often reflect better quality habitats for a wide range of species including protected species. They have very high biodiversity value and if actual ancient woodland remains, may be classed as irreplaceable habitat.

# How do I have my say?

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

## Join our face to face information session

Our in person public information session will be held at the following time and location:

**Wednesday 14th December 2pm – 7pm**

**Dunoon Burgh Hall, 195 Argyll Street, Dunoon PA23 7DD**

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.



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."



## Caitlin Quinn

**Community Liaison Manager**



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SSEN Transmission,  
1 Waterloo St,  
Glasgow, G2 6AY

**If you are unable to join us at our face to face event, there are still plenty of ways to engage with our team:**

- You can contact us by email, phone or post. Please see details for the Community Liaison Manager.
- We are happy to arrange meetings for individuals or small groups to discuss any areas of interest and if this is something you would like us to facilitate, please contact us as soon as possible.
- We are happy to post out copies of this brochure, please contact the Community Liaison Manager to arrange this.

## Additional information

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

### Project website:

[www.ssen-transmission.co.uk/projects/project-map/dunoon/](http://www.ssen-transmission.co.uk/projects/project-map/dunoon/)

### Follow us on Facebook:

@ssencommunity

### Follow us on Twitter:

@SSEtransmission