

Argyll and Bute Region

Information Sharing Webinar

17 March 2021



Scottish & Southern
Electricity Networks

TRANSMISSION

Agenda

Topic:

Welcome & Introductions

Overview of SSEN Transmission & Net Zero

Recent & Ongoing Construction Projects

Confirmed Projects Within our Business Plan

Future Development Projects

Stakeholder Engagement & Future Events

Facilitated Q&A

Speaker:

Kelly Scott – Stakeholder Engagement Manager

Aileen McLeod – Director of Business Planning & Commercial

Ian Clark – Lead Delivery Project Manager

Russell Stewart – Lead Development Project Manager

Dougie Hill – System Planning Engineer

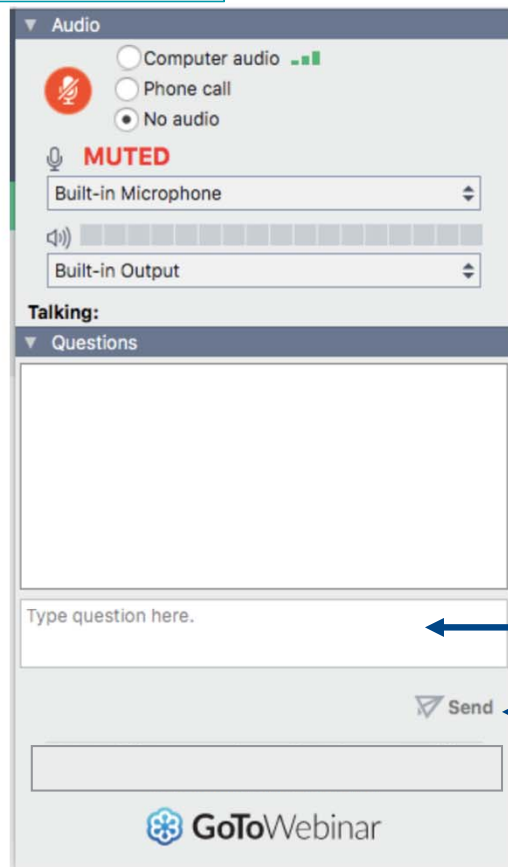
Russell Stewart – Lead Development Project Manager

Wendy MacIntyre – Head of Stakeholder Engagement

Kelly Scott – Stakeholder Engagement Manager

Submitting your questions

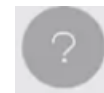
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Type your question here

Then, click 'Send'

Mobile/tablet:



Click here to bring up the question panel. Then, click 'Send'

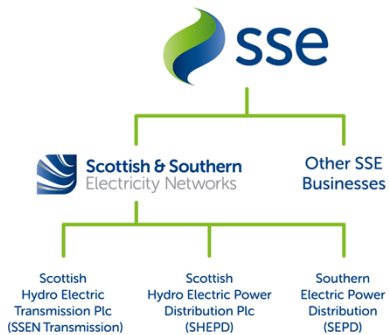


Overview of SSEN Transmission & Net Zero

Aileen McLeod

Director of Business Planning & Commercial

Who we are – SSEN Transmission



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.

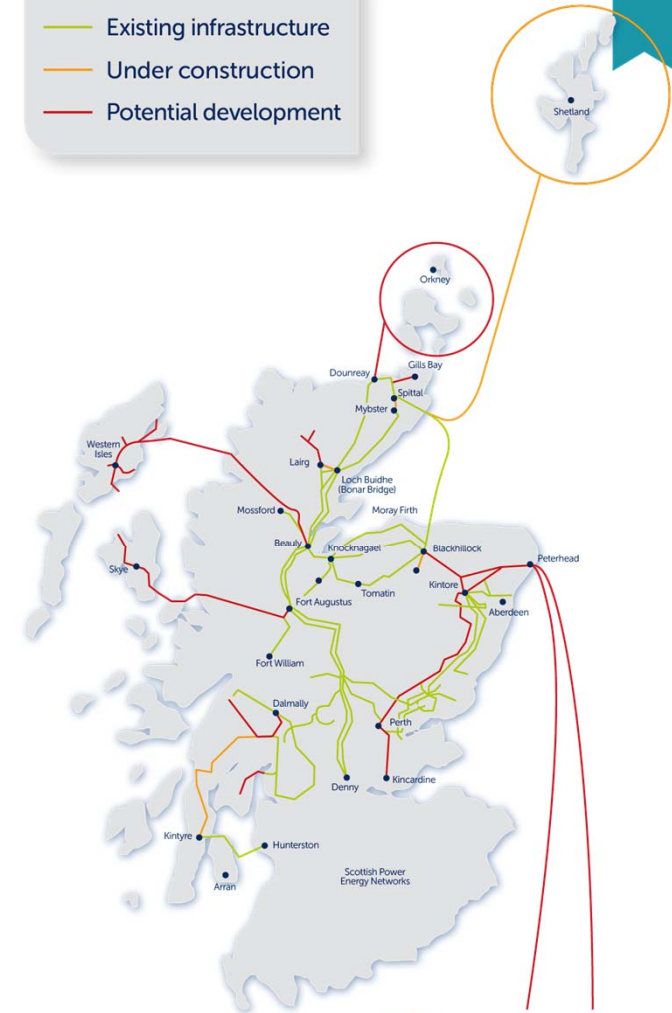
What is the difference between transmission and distribution?

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.



A Network for Net Zero – Our 5 Year Business Plan

Ambitious and Stakeholder-led Business Plan

- Five Clear Goals
- Delivers a pathway to net zero & greenhouse gas emissions reduction targets

Approved by our Regulator Ofgem

- £2.1bn total expenditure agreed over the next 5 years
- All expenditure has a need which can be demonstrated now

Dealing with Uncertainty

- Mechanism for increasing expenditure when the need becomes more certain
- Our Likely Outturn Assessment estimates this at +£1.2bn over the price control period



Our Business Plan has 5 clear goals

This RIIO-T2 Business Plan has **Five Clear Goals**



Transport the renewable electricity that powers 10 million homes



Aim for 100% transmission network reliability for homes and businesses



Every connection delivered on time



One third reduction in our greenhouse gas emissions



£100 million in efficiency savings from innovation

In delivering these Goals, we will:



Protect consumers from uncertainty



Involve our customers and stakeholders



Be open and transparent

We forecast this will cost:



Total expenditure of between £470 million and £750 million each year



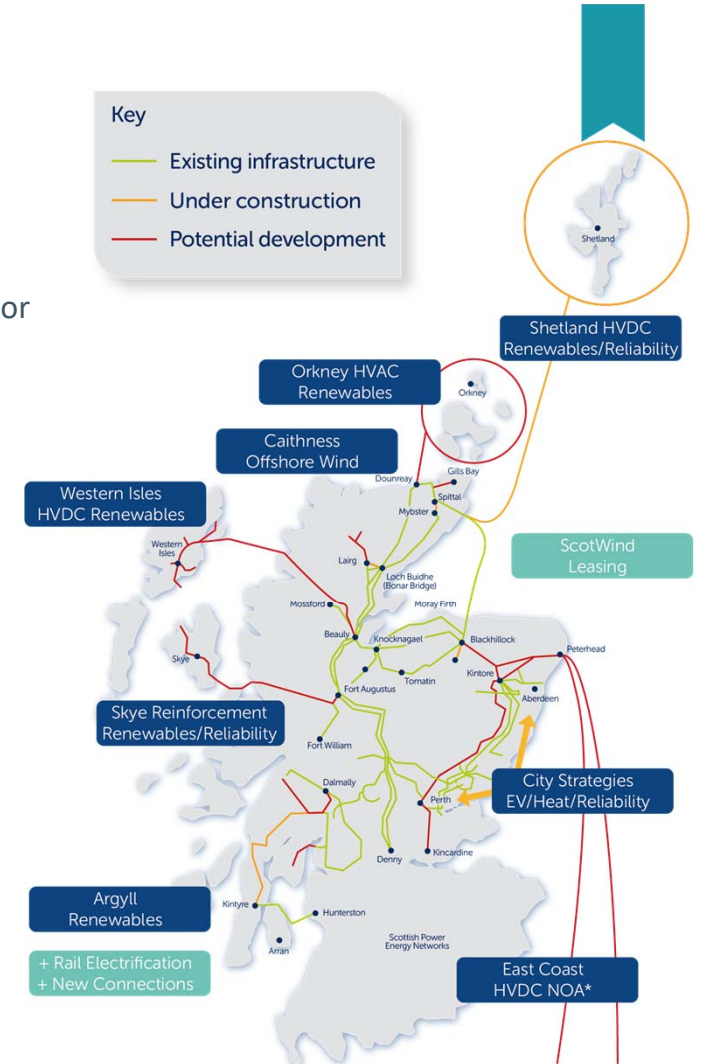
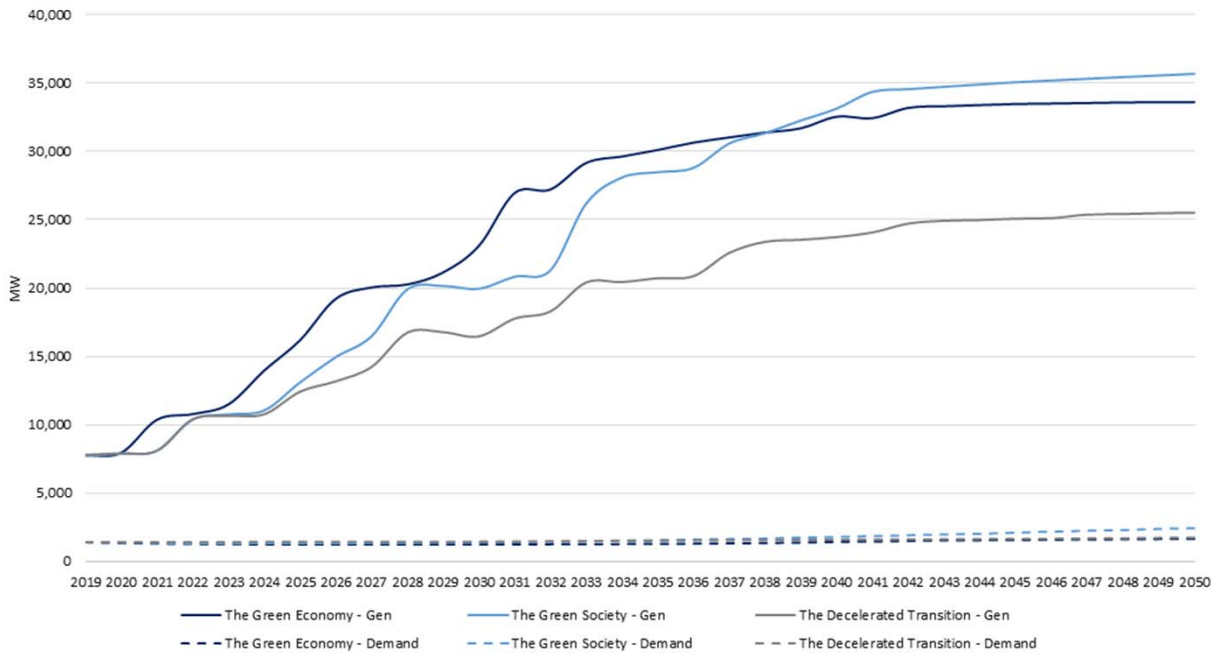
Around £7 for the average GB household each year

WE'VE HAD OUR SCIENCE-BASED TARGET APPROVED



Future Energy Scenarios

Generation and Peak Demand (MW) in the north of Scotland for the three Electricity System Operator (ESO) Future Energy Scenarios (FES) net zero pathways



www.ssen-transmission.co.uk/information-centre/industry-and-regulation/future-energy-scenarios/
Includes thermal & distributed generation

Future Energy Scenarios





Recent and Ongoing Construction Projects

Ian Clark

Lead Project Manager

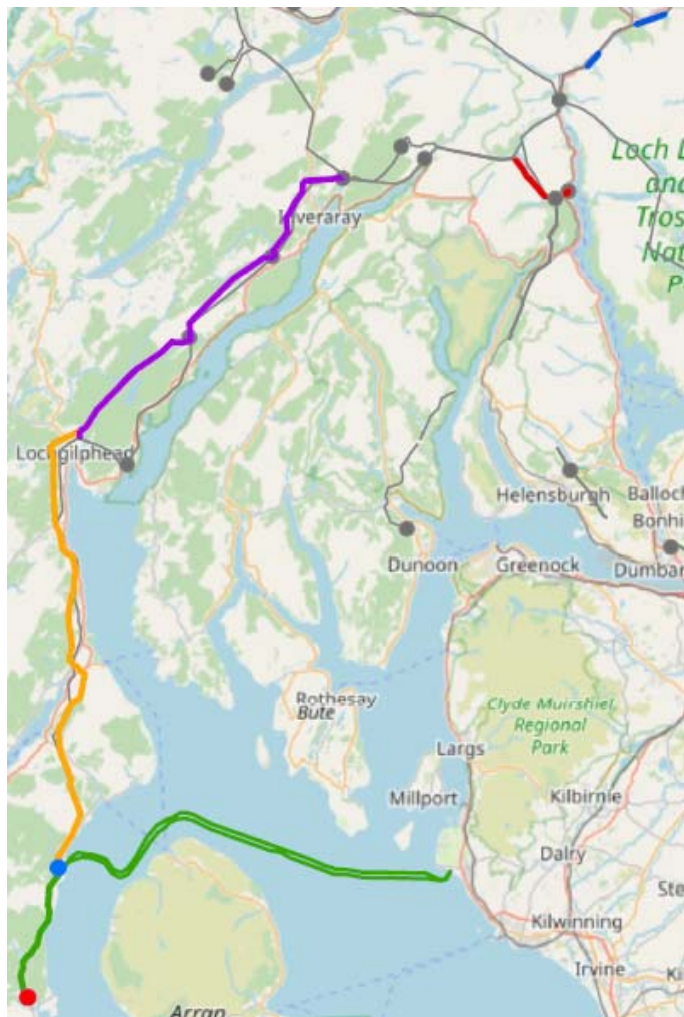
History & need for upgrade

- Existing network constructed over 60 years ago - designed to transmit electricity to consumers in rural areas of low-density population
- Snow storm in 2013 left 3,000 homes without electricity - caused the unprecedented collapse of two steel towers - was the first tower collapse we had experienced on our network since 1987



- Assets at the end of their serviceable life - need replaced to maintain supply to our customers
- As we strive for Net Zero, the network capacity needs to be increased to transport the growing renewable generation to consumers across the country

Where are the construction works being done?

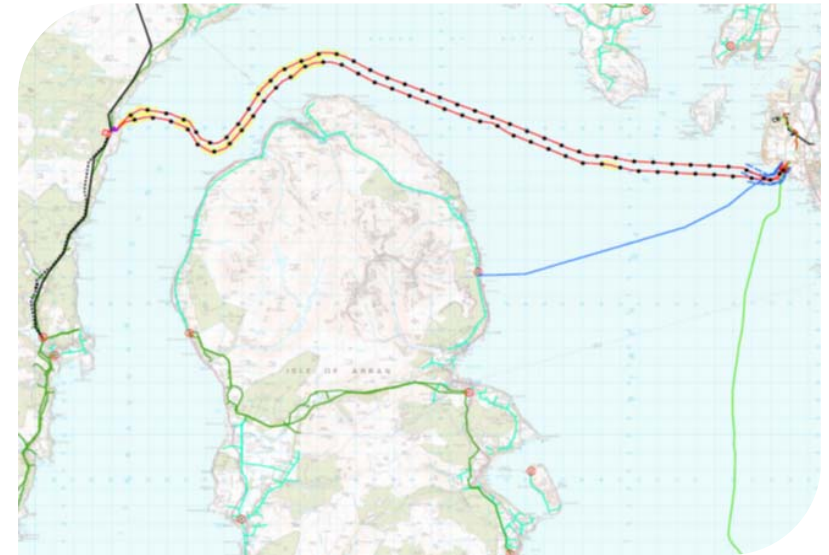


- Kintyre - Hunterston (Complete)
- Inveraray to Crossaig Reinforcement (In Construction)
- Glen Falloch VISTA (In Construction)
- Sloy VISTA (In Construction)
- Inveraray to Crossaig Reinforcement (Commences May 2021)
- Carradale Substation Reinforcement (In Construction)
- Crossaig Substation
- Existing Substation
- Existing OHL



Kintyre – Hunterston Reinforcement

- Completed in June 2016
- Securing supplies for customers and enabling the connection of renewable generation to the grid



The project included:

- 41km of double circuit 220kV sub-sea cable from Port a'Mhiadair to Ardneil Bay
- 14km 132kV overhead tower line from Crossaig to Carradale substation
- 220/132kV substation at Crossaig
- 4km of land cables into Hunterston

Carradale Substation



- Upgrade to the existing substation to enable generation connections
- Replacement of four existing transformers with higher capacity units to enable this upgraded connection



- New transformers filled with Ester (a man-made oil) is more environmentally friendly than mineral oil in the existing units
- Work is due to be completed by the end of 2022

Inveraray to Crossaig Reinforcement

- Existing lightweight towers, conductors and fittings in need of replacement
- Refurbishment not a viable solution due to the extent of upgrade work required
- Nearby generation schemes need an upgraded network
- New higher capacity overhead line provides a secure customer supply and the capacity for additional low carbon generation to achieve net zero



Inveraray to Port Ann Reinforcement – Phase 1



New 39km overhead line between Inveraray and a tee-off point west of Lochgilphead

- 129 new towers
- Removal of 200Ha of forestry
- 98km of access track upgraded or constructed
- Over 250 people employed, including local contractors

COVID-19 challenges to the project and the community

- Changing the way we travel, work and provide accommodation has required resilience from all

Community Liaison Group

- Helped address community concerns and provide a means of open two-way communication



Inveraray - Crossaig

Phase 1 Construction Update Video



Port Ann to Crossaig Reinforcement – Phase 2

New 45km overhead line between Lochgilphead and Crossaig Substation

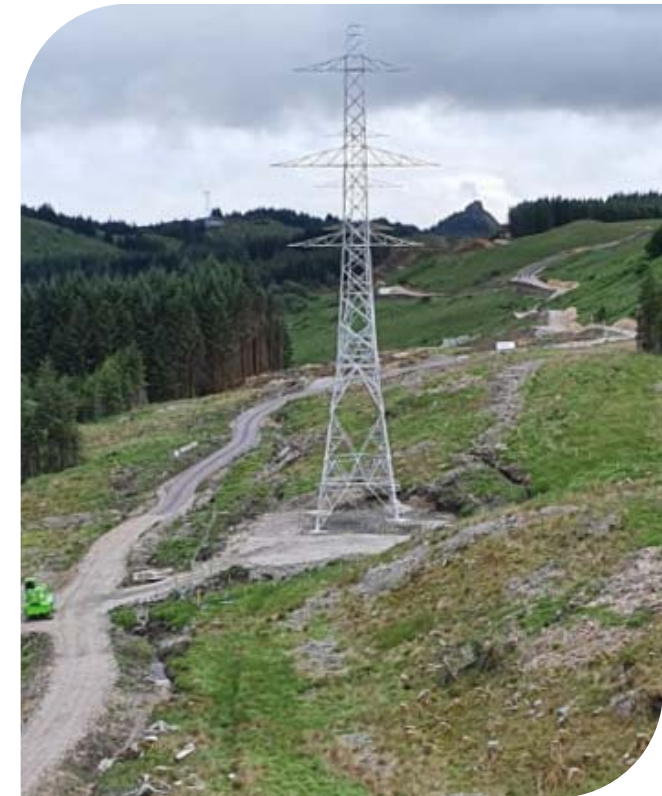
- 149 new towers
- Removal of 380Ha of forestry
- 108km of access track upgraded or constructed
- Anticipate 200-250 people employed

- Community Liaison Group being established ahead of the works
- Working with the Community in the Tarbert area

Works Start May
2021

Full energy
Summer 2023

Works complete
early 2024



Glen Falloch & Sloy VISTA

(Visual Impact of Scottish Transmission Assets)



- Our policy initiative to assess the impact of existing infrastructure on National Parks and National Scenic Areas and identify effective mitigation proposals
- Ofgem administered fund
- Undergrounding of 7.3km of existing 132kV overhead lines within Loch Lomond and the Trossachs National Park approved by Ofgem in 2020
- 26 steel towers to be removed by the end of 2021



Projects within the RIIO T2 Business Plan

Russell Stewart
Lead Development Project Manager



Dunoon Overhead Line Rebuild

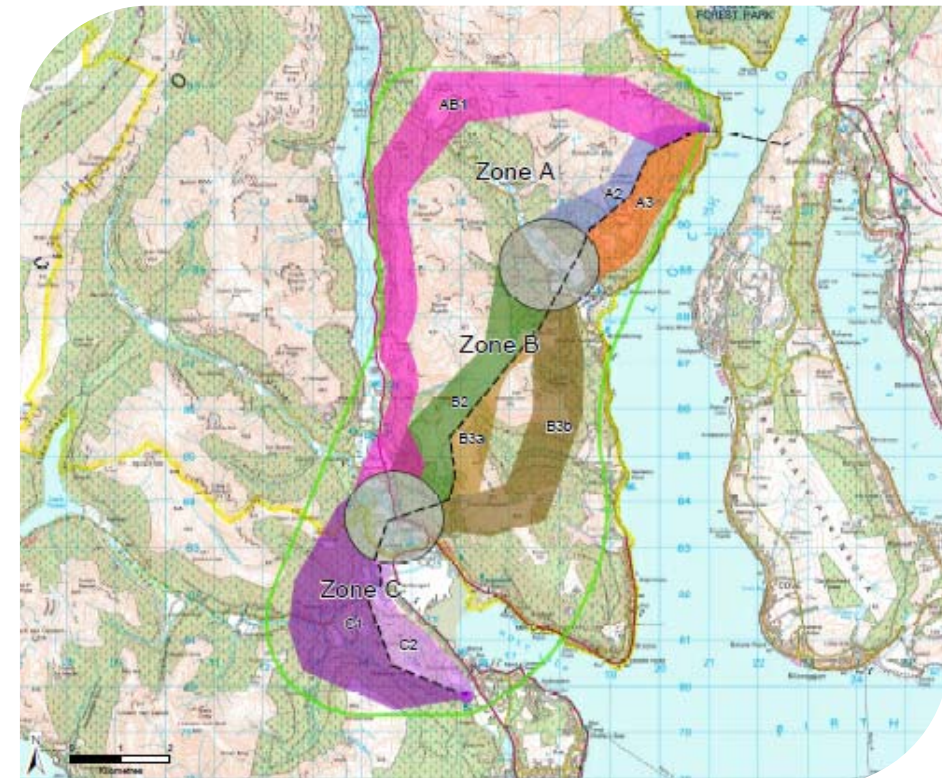
Scope & Work to Date

Scope

- Due to current asset condition and requirement to intervene because of fault issues on these circuits, SSEN Transmission are progressing the Dunoon Overhead Line Rebuild
- Construction of approximately 16 km new 132kV overhead line from North of Ardentinny to Dunoon GSP located near Sandbank
- Reconductoring of the Loch Long crossing
- Decommissioning/removal of the existing 16 km 132kV overhead line from Ardentinny to Sandbank

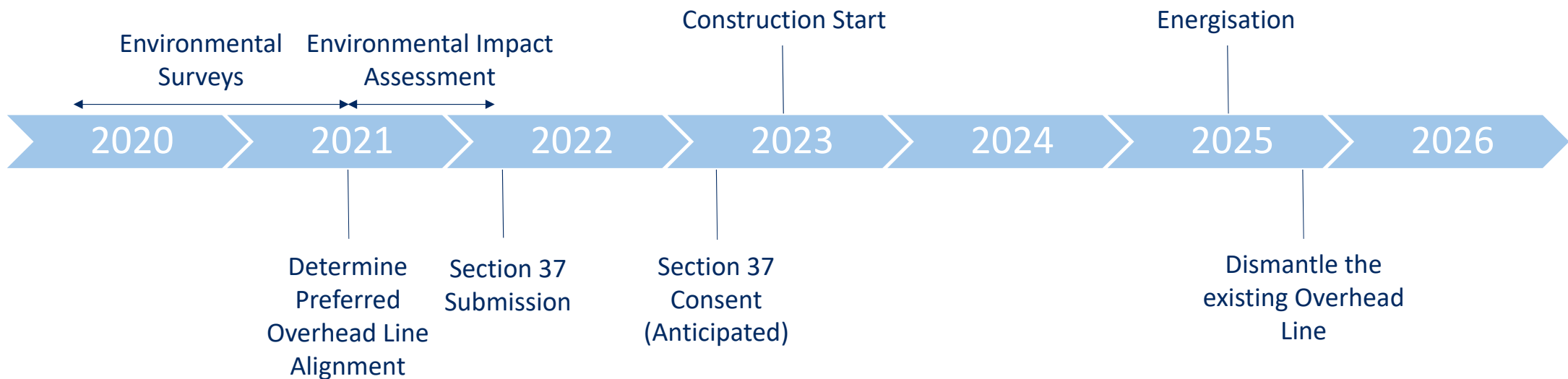
Work to Date

- Identification of route corridors and review of suitable technologies for use
- Consultation with both statutory and public stakeholders
- Landowner engagement
- Preliminary preferred route identified for alignment purposes



Dunoon Overhead Line Rebuild

Programme & Key Upcoming Activities



- A preferred overhead line route has been identified
- Further consultation with stakeholders will take place in Summer 2021
- Commencement of an Environmental Impact Assessment to inform the Section 37 Submission

Sloy Power Station Substation Rebuild

Scope

- Transmission assets reaching end of working life to be replaced
- Includes new substation near the existing one at the power station - comprises 4 new grid transformers with associated 132kV circuit breakers and 11kV infrastructure
- Tower and gantry works required for connection to the existing overhead line - 11kV cables to be installed to connect back to the power station from the new substation location
- Removal of existing grid transformers and associated equipment at the existing substation

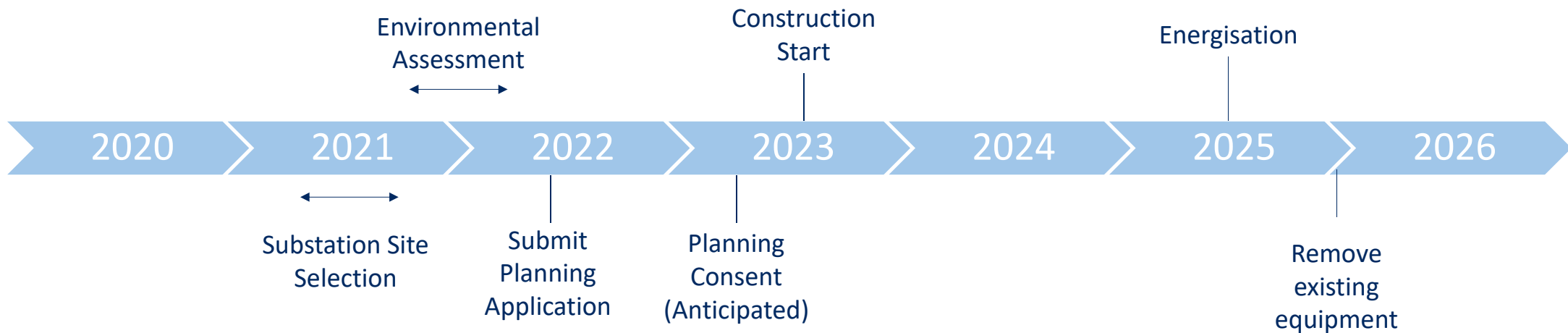
Work to Date

- Identification and planning of key project activities
- Includes which stakeholders to engage with during the project
- Initial review of potential new substation sites near the hydro power station



Sloy Power Station Substation Rebuild

Programme & Key Upcoming Works



- Continue the Substation Site Selection Process and undertake consultation with Stakeholders and the Public on our proposals
- On receipt of feedback, progress with the necessary assessments to prepare and submit a Planning Application

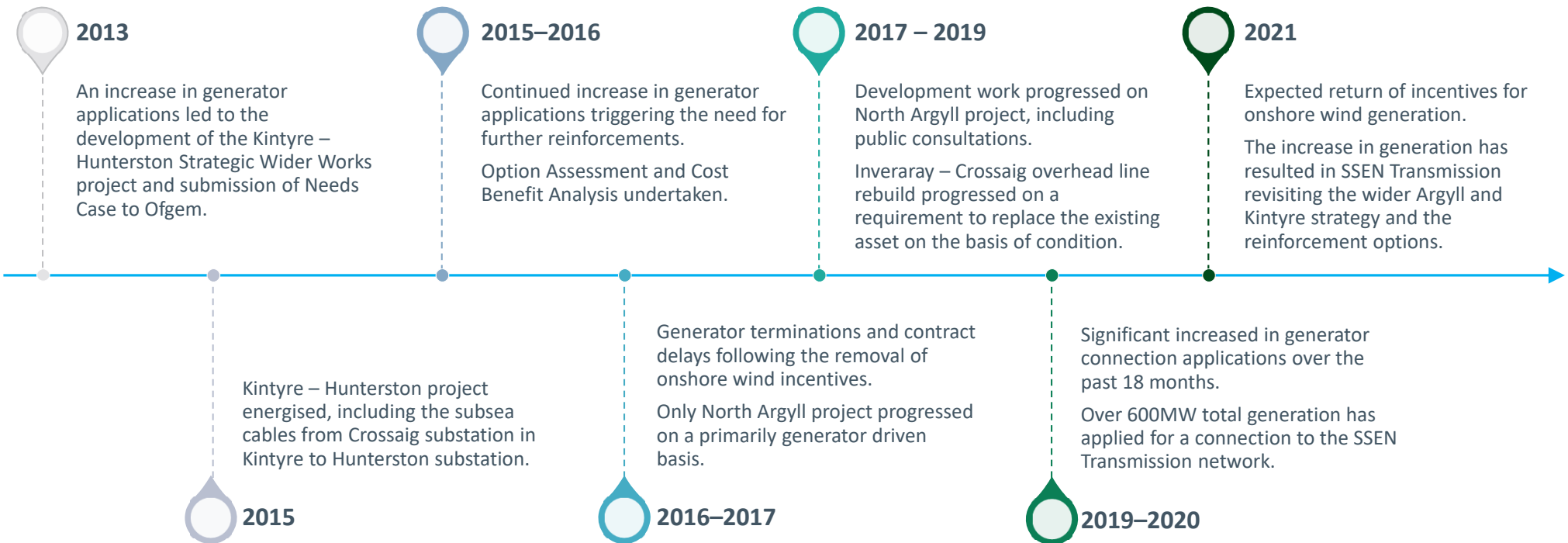


The Argyll and Kintyre 275kV Strategy

Dougie Hill - System Planning Engineer

Russell Stewart - Lead Development Project Manager

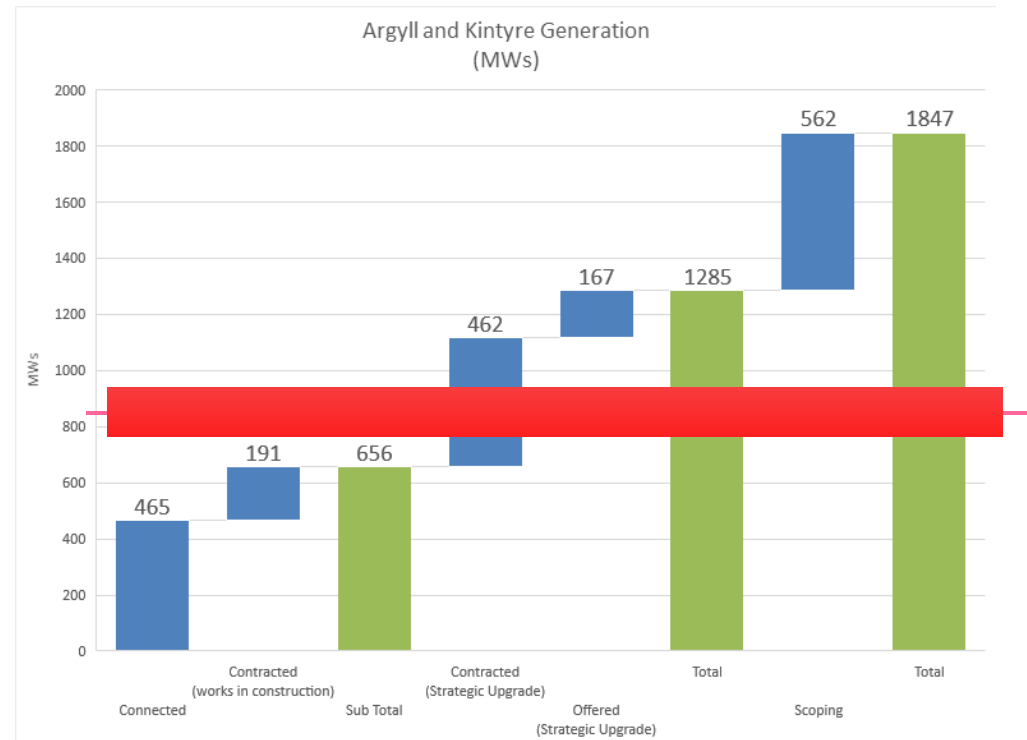
Argyll and Kintyre – Background



Argyll and Kintyre – Need for Reinforcement

The need for further reinforcement beyond that already under construction is being driven by new renewable generation, predominantly onshore wind

- Generation in the area has fluctuated since 2015 due the renewable energy subsidies available and then the subsequent removal for new projects in 2017
- The renewed push for renewable energy has seen a significant and sustained increase in applications and scoping generation in the past 12-18 months
- Onshore wind will be eligible to bid into the next CfD auction and offers a route to market for consented and contracted schemes
- Capacity of existing Transmission network is insufficient to accommodate increased generation seeking connection, and reinforcement is required to develop a network for net zero



Contract for Difference (CfD)- current UK government support for delivery of low carbon electricity generation

Argyll and Kintyre – 275kV Scheme Scope

Options considered to increase the capacity of the line in order to accommodate new wind farm connections
In refreshing the options assessment, various permutations were put forward for review:

- Subsea cable options from Crossaig across the Firth of Clyde into Scottish Power's network area
- A subsea cable option from Carradale with a rebuild of the Overhead Line between Crossaig and Carradale
- Construction of new substations at Inveraray, Clachan and Inverarnan and new Overhead Line via Sloy

These options contain elements of works contained within the current preferred option



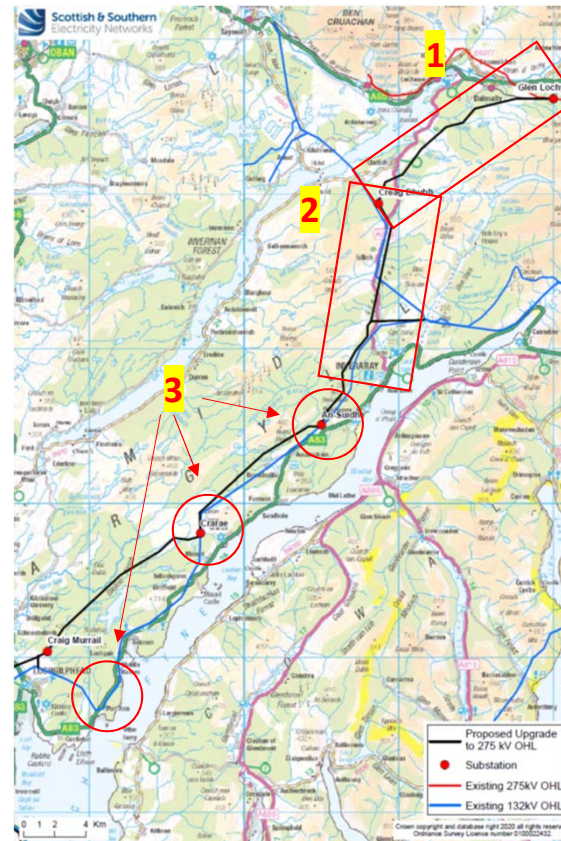
Argyll and Kintyre – 275kV Scheme Scope

Preferred Option

1. Establishing a new substation at Creag Dhuhb and new switching station at Glen Lochy, connected by c. 14km of new Overhead Line
2. c.10km of new Overhead Line between Creag Dhuhb and a tee point on the existing Inveraray-Crossaig Circuits
3. Upgrade of An Suidhe, Crarae and Port Ann substations
4. Construction of the Craig Murrail substation
5. Construction of a new substation in the vicinity of the existing Crossaig substation

Customer Connections

Additional Overhead Line infrastructure and substations are to be constructed to connect wind generation along the route

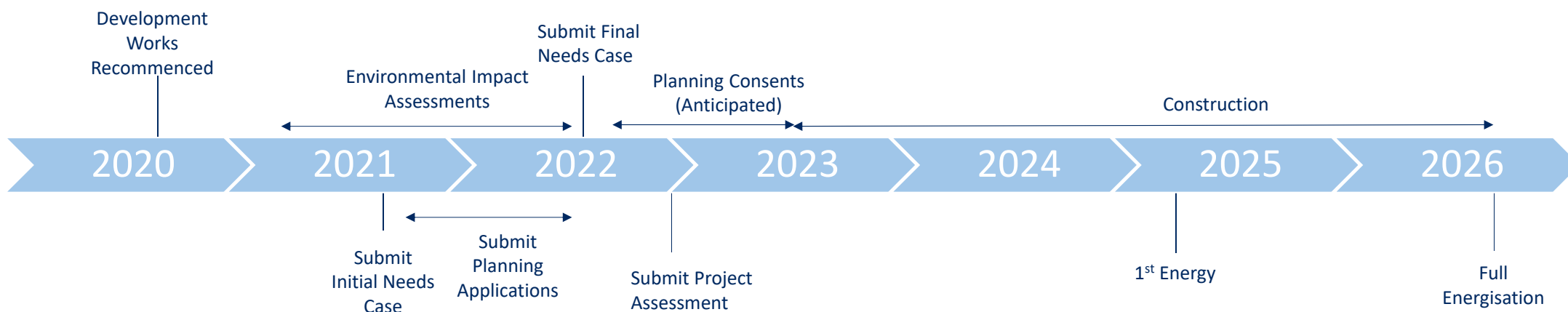


Argyll Strategy - Opportunities and Challenges



Opportunities	Challenges
<p>Contribution to the progress of Net Zero and Renewable Energy Targets through increasing the volume of renewable generation within Scotland through connection of wind farms</p>	<p>Certainty of generation which provides our drivers for the works can be subject to various factors outside the control of SSEN Transmission. This may include generators being at different stages in the connection process, Contract for Difference rounds, etc</p>
<p>Provide significant employment and economic opportunities within the Argyll Region and increase SSEN Transmission’s requirement for operatives in this area; supporting a green economic recovery from coronavirus pandemic</p>	<p>Aligning provision of key deliverables and regulatory funding approvals and timelines, including planning submissions, consents and securing land can be complex across a project of this scale and can impact on programme</p>
<p>Develop good relationships with all stakeholders as SSEN Transmission progress the scheme</p>	<p>Balancing the interests of all stakeholders to achieve the correct outcomes during development and construction of the scheme</p>
<p>Provide opportunities for the local supply chain to support the construction and operation of the Transmission Infrastructure</p>	<p>Working across the varied terrain in Argyll and Kintyre and managing the construction of new infrastructure whilst maintaining the integrity of existing assets in the interim</p>

Argyll 275kV Strategy Key Dates



Key Upcoming Dates include:

- **Creagh Dhubh – Inveraray 275 kV Reinforcement**
New Overhead Line Route Consultation
3 events from w/c 26 April 2021
- **Creagh Dhubh – Dalmally 275 kV Connection**
Substation and Switching Station Consultation
3 events from w/c 10 May 2021
- **An Suidhe, Crarae, Crossaig and Craig Murrail**
Substation Site Selection Consultation
3 events from w/c 7 June 2021
- **Submission of Initial Needs Case and Consultation by Ofgem –**
Autumn 2021



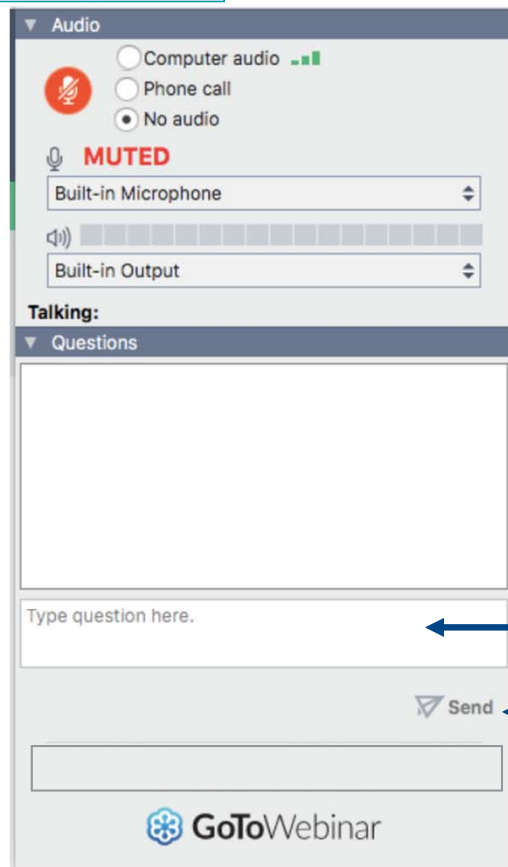
Stakeholder Engagement

Wendy MacIntyre

Head of Stakeholder Engagement, Transmission

Submitting your questions

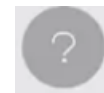
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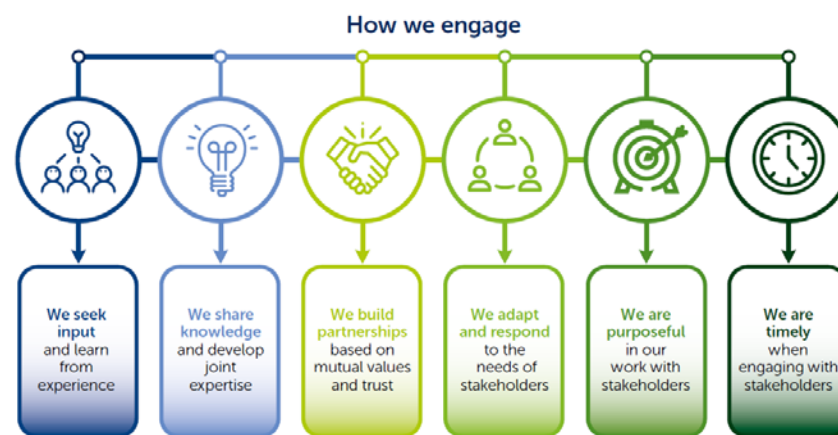
Our Stakeholder Engagement Commitment



Stakeholder Engagement Strategy



Stakeholder Engagement Action Plan



<https://www.ssen-transmission.co.uk/media/3727/stakeholder-engagement-action-plan.pdf>

<https://www.ssen-transmission.co.uk/media/3736/stakeholder-engagement-strategy.pdf>

Upcoming engagement opportunities



Anticipated Dates <i>final confirmation will be published on our website and emailed to those on our email distribution lists</i>	Event	Project
17 March 2021	Information Sharing Webinar	Argyll & Bute Overview
7 April 2021	Generation Developer Seminar	Argyll 275kv Strategy
w/c 26 April 2021	Public Consultation	Creag Dhubh – Inveraray 275 kV Reinforcement
w/c 3 May 2021	Public Consultation	Creag Dhubh – Dalmally 275 kV Connection
May 2021	Set up of Kintyre Community Liaison Group	Inveraray – Crossaig (Phase 2)
Late Spring 2021	Meet the Buyer Event	Regional and/or Inveraray – Crossaig (Phase 2)
w/c 7 June 2021	Public Consultation	An Suidhe, Crarae, Crossaig and Craig Murrail Substation Site Selection Consultation
Summer 2021	Public Consultation	Dunoon Overhead Line Rebuild
August 2021	Initial Needs Case Submission	Argyll 275kV Strategy
Summer / Autumn 2021	Possible COP26 engagement & collaborations	SSE are a principal partner & sponsor for COP26

Please email transmission.stakeholder.engagement@sse.com to be added to our engagement email distribution list



Keeping in touch

- Please continue to engage with SSEN Transmission and SSEN Distribution colleagues who you are already working with
- For new enquiries the following contact details may be useful

Subject Matter	Email Address	Additional Info
SSEN Transmission customer connection enquiries	transmission.connections@sse.com	Direct contact to the customer experience team who manage demand and generation connection contracts
Local Supply Chain enquiries	https://www.o4b-highlandsandislands.com/	Portal which can be used to facilitate trade and engagement between large Project Developers, Tier 1 and 2 organisations and local suppliers and service providers in the Highlands and Islands
SSEN Transmission Communities & Landowner enquiries	https://www.ssen-transmission.co.uk/	Each confirmed project has a dedicated webpage providing contact details for the community liaison manager and land manager
Any other Stakeholder Engagement	transmission.stakeholder.engagement@sse.com	Manned daily Mon-Fri by the stakeholder engagement team who can answer your enquiry or direct it to those who can

Inveraray - Crossaig

Project overview | Project updates | Project documentation

Project Type: Transmission reinforcement
Location: Argyll & Bute

Contact Details

Liaison Manager: Helen Batey
Title: Community Liaison Manager
Email: helen.batey@sse.com
Mobile: 07778453993
Address: 1 Waterloo Street, Glasgow, G2 5AY

Land Manager

Status: Construction Phase

Latest

- Building a network for net zero: SSEN Transmission webinar to share ambitious investment plans for Argyll and Bute region
Date: 04 Mar 2021
[View article](#) / [View all articles](#)
- Section 37 consent granted for Inveraray - Crossaig Transmission line
02 August 2019
[View article](#)

What is the Inveraray-Crossaig project?
The aim of the project is to reinforce the existing transmission network between Inveraray and Crossaig to enable renewable energy projects to connect to the electricity network, and to ensure security of supply. The main elements of the project are as follows:

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

A project information page on our website www.ssen-transmission.co.uk

Sharing your views



On conclusion of this webinar you'll be invited to complete a feedback form

We're keen to discover:

- Your views on the usefulness of this webinar
- Which projects you'd like to know more about
- Which subjects you'd like engage on e.g. generator connections, communities, environment, supply chain, net zero policy
- Which engagement mediums you'd appreciate and how frequently you'd like to engage e.g. webinars, newsletters, roundtables, townhalls
- Please supply your contact information if you'd like to be kept informed

SURVEY PREVIEW

Start survey

Argyll and Bute - Information Sharing Webinar - Feedback Form

1. How would you rate the quality of today's event?

1 2 3 4 5

Very poor Neutral Very good

2. Did you find the online format accessible and easy to use?

Yes
 No

3. (2 cont.) Please explain your answer:

Q&A Session

Please submit your questions via the question box

Thank you for joining us

A recording of this webinar and the associated slide pack will be available on www.ssen-transmission.co.uk in the next few days