 <b>Scottish &amp; Southern</b> Electricity Networks TRANSMISSION	Document reference	16/02/22
	Revision	V2
	Function	Major Projects

<b>Meeting</b>	Beaully Community Liaison Group
<b>Date</b>	15 <sup>th</sup> February 2022
<b>Time</b>	7pm

#### Beaully CLG Attendees

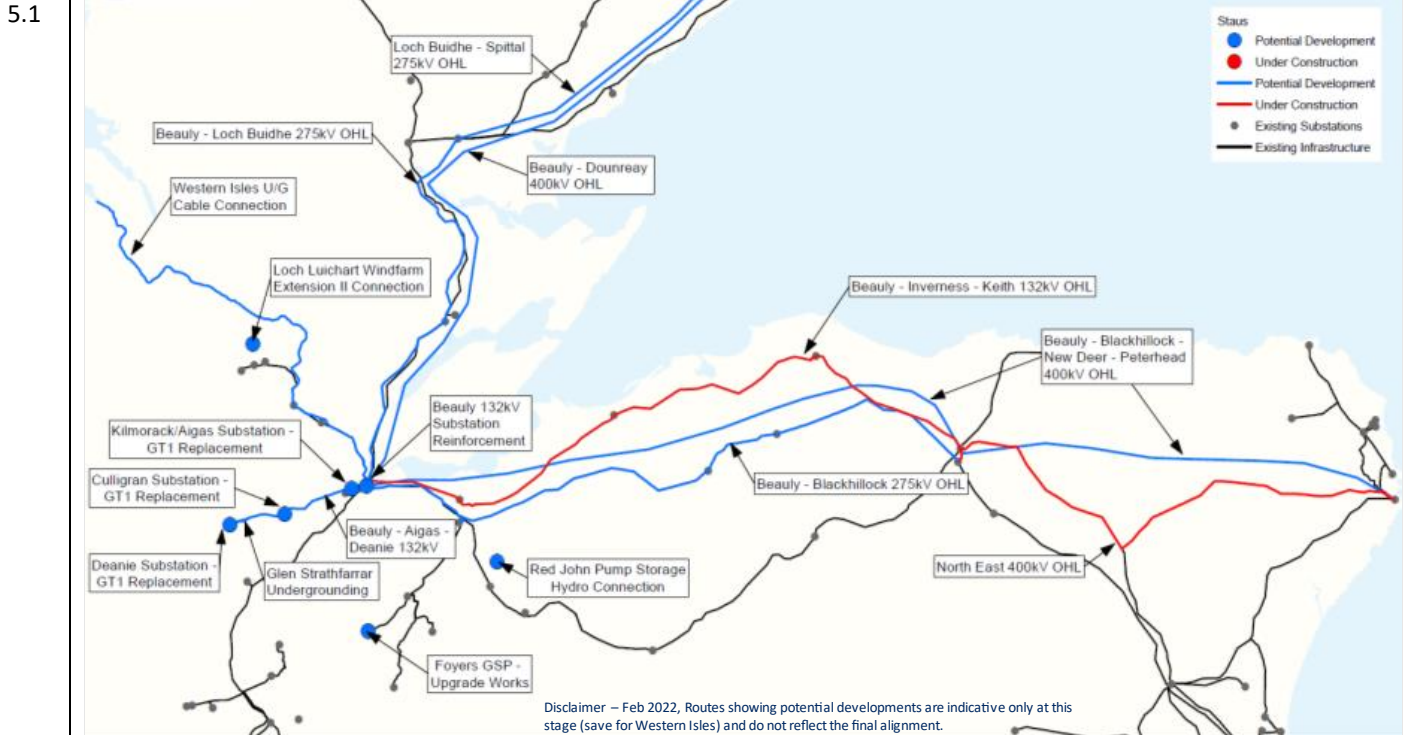
Attendees	Position
Karen Fox (KF)	Regional Development Project Manager
Rob Slaughter (RS)	Senior Substation Project Engineer
Calum Watt (CW)	System Planning and Investment Manager
Simon Hall (SH)	Lead Consents and Environment Manager (Central & Highlands)
Lauren Riach (LR)	Consents and Environment Strategy Manager
Lesley Dow (LD)	Head of Community Engagement
Simon Johnstone (SJ)	Construction Project Manager
Duncan McCall (DMc)	Project Manager
Bless Kuri (BK)	Head of System Planning and Investment
Rebecca Gay (RG)	Development Project Manager
Sally Cooper (SC)	Community Liaison Manager
Cllr Margaret Davidson (MD)	Leader of THC and Ward 12 Councillor
Cllr David Fraser (DF)	Ward 12 Councillor
Iain Shepherd (IS)	Lovat Estates
Simon Fraser (SF)	Lovat Estates
Steve Byford (SB)	Kilmorack CC and Beaully CLG
Bill Fraser (BF)	Kiltarlity CC and Beaully CLG
John Stewart (JS)	Kilmorack CC and Beaully CLG

#### Minutes

<b>1.0</b>	<b>Introductions and apologies</b>
1.1	Introductions undertaken
1.2	KF gave a presentation by sharing screen with the CLG on Teams, information from this has been used to populate the minutes for the meeting.
<b>2.0</b>	<b>Safety Moment</b>
2.1	An update was provided on the recent changes in the Highway code, emphasising the higher priorities now to be given to non-motorist road users such as pedestrians, cyclists horses etc. The update included the introduction of the `Dutch reach` which avoids drivers opening the car door to on-coming cyclists/cars, by using the opposite hand to open the door which requires turning to look first before opening the door.
<b>3.0</b>	<b>Agenda</b>
<b>4.0</b>	<b>Previous Minutes, Actions Arising</b>
	Previous Minutes were agreed and actions arising were addressed through the progression of the presentation, depending on the item and where it fitted into the presentation, these were: Why Beaully – The Development Process – <b>COMPLETE</b> Map showing projects interfacing with Beaully/Highland – <b>COMPLETE</b>

Road and visual impact improvements around quarry and substation entrances – **COMPLETE** and updated visuals around the quarry entrance will be available on project web page and Councils` E-portal for public viewing and feedback  
 Badger Sett Update – **COMPLETE**  
 Beaully Cluster – Maps/info showing current and proposed site locations with compound sizes - **COMPLETE**

**5.0 Why Beaully? The Development Process**

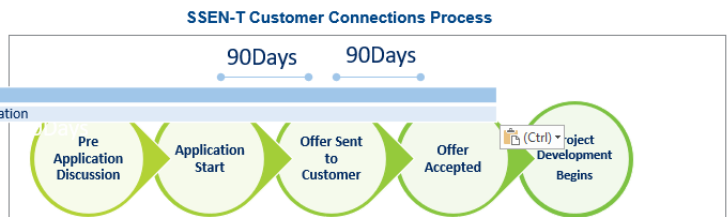


**5.2 Customer Connections and Network Options**

**Licence Obligation to Connect Customers**

As the transmission licence holder in the north of Scotland we have a duty under Section 9 of the Electricity Act 1989 to facilitate competition in the generation and supply of electricity. We have obligations to offer non-discriminatory terms for connection to the transmission system, both for new generation (export) and demand (import).

- All Applications managed through the System Operator (National Grid)
- SSEN Transmission responsible for identifying the works to connect customers and reinforcements required ensure a safe and secure transmission network



MD asked questions around whether SSER receive different treatment to other customers requiring connections, whether Transmission have a legal obligation to connect and if the National Grid apply to Transmission?

CW responded that there is strict business separation between Transmission and SSER, with SSER being in the queue with the other customers requiring connection. It was explained that as the Transmission Operator for the North, there is a legal obligation to provide a connection offer with connection applications initially going through National Grid which are then passed on to Transmission.

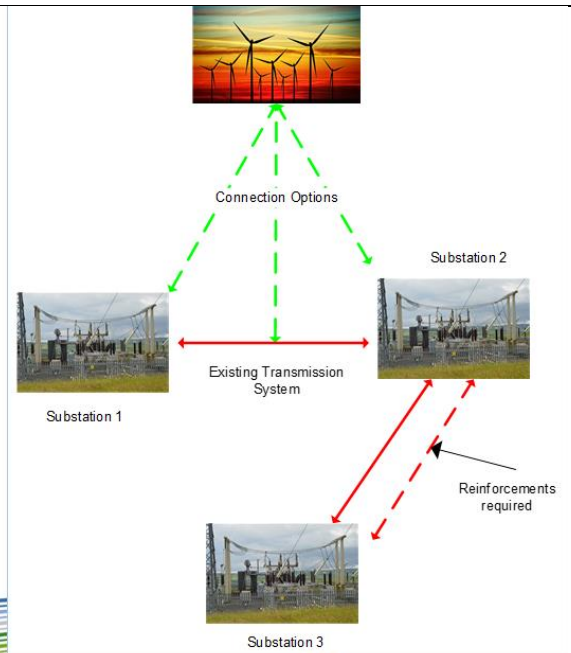
5.3

# Customer Connections

## Connections Application Process

The initial connection option is provided through desktop studies and our knowledge of the Transmission system. To assist this process we undertake:

- Power system analysis to identify the system options to maintain network compliance.
- Specialist development input to understand the potential options
- Advice from subject matter experts to support the development of option(s) programme, scope and cost to be made in an Offer to the customer.
- Wider System Reinforcements are identified in customer offers, but the progression of these is subject to further economic analysis to determine what the GB system requires.



5.4

# Network Options Assessment

## What is it?

- The Network Options Assessment (NOA) is the System Operators recommendation for which reinforcement projects should receive investment. These projects are major electricity transmission network reinforcements.
- This looks at the whole of the GB system to decide which reinforcements are in the interest of GB consumers.



Range of credible pathways for the future of energy from today to 2050.



The likely future transmission requirements on the electricity system.



The options available to meet reinforcement requirements on the electricity system.



-SB and DF asked with reference to NOA the outlook for Beaulieu with predictions of 30yrs, 10 years and annual statements, asking whether Transmission are ahead of what we are asked to provide compared to what Transmission is planning for and the amount of pressure placed on the network system. CW responded that such a level of growth was not predicted by anyone and explained that works need to be done before connections are made and these works ensure that assets are capable of accommodating the required power, the level of demand resulting in queues for customers. CW also explained the meaning of EISD (Earliest in Service date) meaning this is the earliest date for project completion if the project is required, NOA makes the decision whether to proceed after starting looking at projects on the development path.

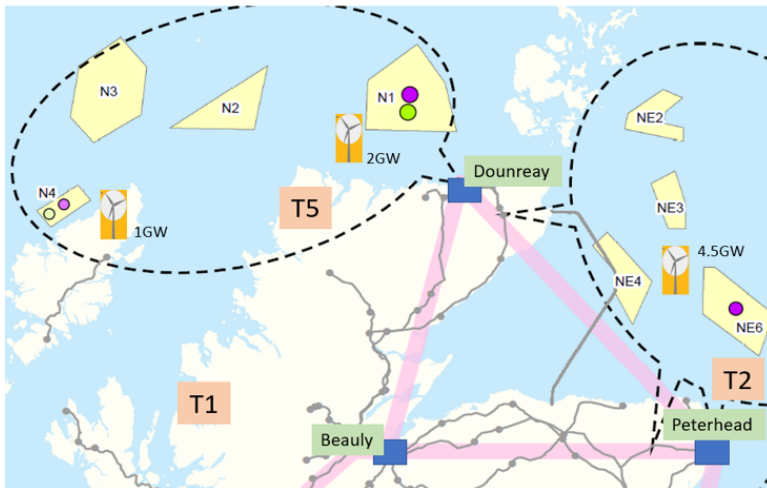
-It was also explained that with new technologies such as hydrogen, in the short term it is unknown how viable this is.

-IS expressed concern with the 3 additional projects coming into Beaulieu, the Dounreay project was not known about. CW explained that these are very much still at concept stage rather than development. NOA use existing substations due to costs to the customer and consumer.



5.5

# Offshore Transmission Network Review Holistic Network Design



Network Options Assessments (NOA) 2021/22 recommendations are based on an initial offshore design whereas the Holistic Network Design (HND) will seek to optimise the coordinated onshore and offshore network considering integrated offshore arrangements.

The Holistic Network Design may change NOA7 recommendations

The NOA process will be re-run after publication of HND

The current recommendations of NOA maintain the Options and allow SSEN Transmission to progress early development works.

-CW clarified for BF that Aberdeen connections do not connect into Beaully, they connect into Peterhead and East Coast.

-IS asked who carried out the HND? CS explained that National Grid coordinates this with direct input from the BEIS (Dept of Business, Energy and Industrial Strategy a Dept of UK Govt) and OFGEM, other stakeholders also feed into this. DF asked about Transmissions' overall vision of the network to which it was explained that Transmission have a duty to connect customers.

-SB requested presentation in plenty of time to read ahead of CLG meetings.

5.6

## Environmental Considerations

### Our science-based target aligned to the 1.5°C pathway



[www.ssen-transmission.co.uk/riio-t2-plan/](http://www.ssen-transmission.co.uk/riio-t2-plan/)

- Reduce our absolute Scope 1 and 2 GHG emissions 46% by FY 2029/2030 from a 2018 base year. We intend to do this by making our substations more energy efficient, replacing our operational vehicle fleet with EVs and tackling SF6 emissions. This builds on SSEN Transmission's commitment to reduce emissions by one third by 2026 as part of its RIIO-T2 Business Plan, A Network for Net Zero.
- Reduce Scope 3 Transmission Losses GHG emissions 50% per gCO2e from losses/kWh by FY2029/2030 from a 2018 base year, by implementing a Transmission losses strategy and connecting more renewable electricity to our network in the north of Scotland.
- Work closely with our supply chain so that two thirds (67%) of our suppliers by spend will have a science-based target by FY2024/2025 and so reducing our indirect emissions.

-BF expressed interest at this information and thanked CW for sharing. He also asked for context and information as to the 2018 baseline to understand what the information represents. SH offered to share the 2018 figures.

Comments arose regarding the proposed GIS at Beaully, SB asking about the reason for using GIS as it takes up less room or are there other reasons?

SJ responded that room is the main reason and RS explained that new technologies planned for new build substations and switching stations and SSE is likely to be one of the worlds first to use 275kV and higher non-SF6. For 132kV, there are 2 options on the market, one is clean air (GWP = zero) and physically a bit bigger, whilst the other uses a gas that is much lower in green house gas emissions, so it is considerably better than SF6. 132kV GIS project is currently considering tenders for both types. SF6 is a very good electrical insulating

gas, but over time its` effect on the environment has become known so the industry is looking to get rid of it. SB asked to know what will be used when the tenders are back.

5.7

## RIIO-T2 Scope 1 & 2 emission reduction plans included within Business Plan



### 1. Substation Electricity Use\*

- Implement an energy efficiency programme on existing substations.
- Install renewable microgeneration (e.g. PV) where viable on existing and new substations.
- Design new energy efficient substations as far as practical.



### 2. SF<sub>6</sub> emissions

- Implement our Insulation and Interruption Gases (IIG) Strategy.
- Achieve an IIG leakage rate of 0.15% by 2025.
- Install SF<sub>6</sub> alternatives when technically and commercially viable on new projects.
- Avoid installing at least 19.9t of SF<sub>6</sub>.



### 3. Operational Transport

- Target 50% of operation transport fleet to become EVs by 2025 to align with SSE Group EV100 target.
- Install EV charging infrastructure (~32 rapid chargers planned).

SH offered to pass on the baselines, in reference to the above slide.

5.8

## Pre-consenting - Development



Explanations were provided as to CION (Connecting and Infrastructure Options Note) – specific to offshore wind, the process is not used as much with the Scotwind process in place.  
 TOCO – (Transmission Owner Connection Offer) – the connection agreement between Transmission and the National Grid.

## Overview of the substation site selection process

- SSEN Transmission has developed and implemented a formal process for the selection of sites for new substations of 132kV and above.
- The main aim of the process is to provide a consistent approach to the selection of new substation sites and is underpinned by our statutory obligations to:
  - *"Develop and maintain an efficient, coordinated and economical electricity transmission system in its licenced area' and in so doing, to 'have regard to the desirability of preserving the natural beauty, of conserving flora, fauna and geological and physiographical features of special interest and protecting sites, buildings and objects of architectural, historic or archaeological interest; and do what we reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites buildings or objects".*
- Our site selection process ensures the design, consenting, construction and operation of a substation is done in a manner that is technically feasible and financially viable whilst causing, on balance, the least disturbance during construction and operation to the environment and the people who live, work and use it for recreation.

-BF expressed thanks for the information provided which has provided an understanding of Transmission's considerable statutory obligations, though in his 5 years of attending CLG meetings suggested things may have been more positive if community engagement over options had been better. With regards to the statement in the above slide he would like to see 'people' and the 'impact on communities' in the paragraph and this aspect has been understressed in the past 5-7 years.


SH expressed awareness of the impact on the community and Transmission are making strides forward in terms of engagement and mitigating community impact and are continuing to further improve. LD reiterated this and explained that community engagement today compared to what was carried out 6 years ago is 'night and day'. Transmission take community impact very seriously and strive to develop mutually agreeable solutions balancing environment, engineering, cost and people. Referencing the map in the presentation to highlighting a much wider approach to consulting and explained future plans for webinars to explain and discuss Transmission's plans for the North of Scotland in order to provide a bigger picture and to carry out more targeted engagement.

After requesting the map BF is happy to see this and in addition would like to see as part of organisational objectives the benefits of engaging at the optioneering stage and providing opportunity for the community to input at an earlier stage in the process. Going on to say that Kiltarlity CC are very interested in hearing about CLG discussions, adding that this is his preferred way to engage.

SH added that now we aim to consult early on in the options stage getting out early and better each time.

-SB asked with reference to the second paragraph of the above slide, when was the last time a new substation was built. SJ responded by saying one in Aberdeenshire has recently been energised and new ones are being built all the time, New Deer and Rothienorman as examples. New Deer being a comparable size to Beaully and Rothienorman similar in size to the 275kV and 132kV combined as Beaully. A similar one is underway at Kintore.

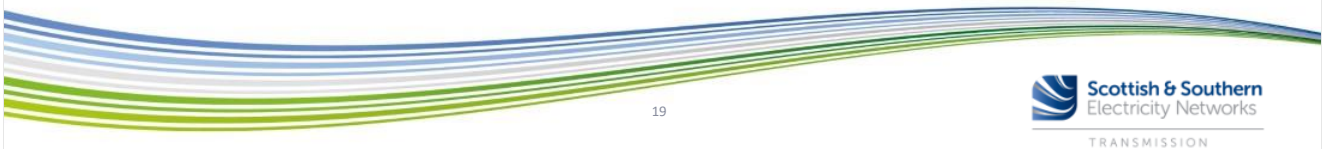
-SB expressed concern at the new Dounreay line, asking the reason for it, stating a lot is planned with 400kV Beaully -Blackhillock, with so much planned for Beaully it seems its allowed as it's a brown field site, permission would likely not be granted if it was to get underway now and asked to know how residents will be consulted and impact will be limited. SH explained with the Beaully substation existing it is a natural connection point and if it were today may not meet the site selection criteria. Community considerations are fed into the optioneering process which need to be delivered for Ofgem and the GB consumer though its not at any cost. Environment and community impact need to be balanced to reach the best compromise. SB highlighted the Western Isles convertor station and suggested a location should be a few kilometres away as they don't want it to become an undesirable place to live.

5.10	<ul style="list-style-type: none"> <li>• <b>Key Stages</b></li> <li>• For most new substation projects, following pre-site selection activities, the approach follows two principal stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance at both stages. This staged process leads to the identification of a proposed substation site, which will be taken forward for planning. The key site selection stages are:</li> <li>• <b>Pre-Site Selection Activities</b></li> <li>• The starting point in all substation site selection projects is to establish the need for the project and to select the preferred engineering option to deliver it. This process will be triggered by the preparation of several internal assessments and documents.</li> <li>• <b>Stage 1: Initial Site Screening</b></li> <li>• This stage seeks to identify technically feasible, economically viable and environmentally acceptable site options within a defined area. The search area may vary depending on terrain, other infrastructure, designated areas and features and connection options. The aim is to identify several potential sites which can be initially assessed for suitability.</li> <li>• <b>Stage 2: Detailed Site Selection</b></li> <li>• This stage seeks to identify a preferred substation site, which avoids where possible physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking into account engineering and connection requirements.</li> <li>• This stage will be reported in a Substation Site Selection Report. Following public and stakeholder consultation, the Report will be updated to include any feedback and modifications made and confirm the proposed substation site to take forward for planning.</li> </ul>
	BF said it would be useful to consider consultation with the CLG at the initial point of final process ahead of going out to public consultation.
6.0	<b>Noise Mitigation</b>
6.1	<h2 style="text-align: center;">Noise Mitigation Update</h2> <h3>Monitoring / Analysis</h3> <ul style="list-style-type: none"> <li>• SSEN-T noise monitors were positioned in two locations (Glengarry &amp; within Substation) just before the completion of the control system modifications (June 2021) and remained in place until 9<sup>th</sup> November 2021. SVC was operated in several different modes during this period, it was in 'noisiest mode' between August and November.</li> <li>• The Highland Council (THC) noise monitors were in place in two locations (Glengarry then Fishing Lodge) between 9<sup>th</sup> October and 8<sup>th</sup> November 2021. Residents at both properties provided 'noise diaries' to assist in analysis.</li> <li>• Report on behalf of THC issued in January 2022: <ul style="list-style-type: none"> <li>◦ Notes significant improvements, with clear pattern of improvement from 2015 to 2018 and finally 2021 data.</li> <li>◦ Concludes that the 2021 measured levels do not constitute a statutory nuisance.</li> </ul> </li> <li>• Analysis of SSEN -T data still ongoing (more data to review from longer monitoring period), but initial feedback confirms improvements.</li> <li>• After completion of SSEN -T analysis, findings will be presented to THC.</li> </ul> <div style="text-align: right;">  </div>
	JS Requested summary of the Transmission`s report covering 6 months of monitoring to see what was picked up. Once available it was agreed to be passed on to him.



## Further Improvements

- As reflected in the Planning submission, Beaulieu Redevelopment project (132kV GIS) affords an opportunity to further improve noise levels, by replacing existing ageing SGTs with new SGTs fitted with full noise enclosures.
  - Mainly impacts 100Hz 'hum'.
  - Planned measurements:
    - Factory measurements of SGTs before despatched to site.
    - Post installation measurements of equipment at site.
  
- Beaulieu SVC operation is related to reactive compensation across the wider SSEN -T network, the amount of which has increased over recent years. A further two STATCOMs are in construction (Alyth & Kinardochy), due to become operational in 2023 and 2024. This is expected to further reduce operation of Beaulieu SVC, with consequential reduction in its noise contribution.
  - Mainly impacts harmonic frequencies / variability.



MD requested to be informed soon of Transmission's plans should the noise return, seeing as the monitoring results indicated that levels were only just acceptable. saying that Noise Abatement Notices can go and come back, and therefore assurances are required as to Transmission's planned actions should noise issues return, and what will be done at that point without reverting to Environment Health or the legal team. Adding that a bigger fuss could have been made via the press reassurances are needed soon on Transmission's planned actions should this happen again. MD continued, asking for the SVC to be put within a building. RS explained that practically this is very difficult to do and agreed that ongoing considerations are required to further reduce noise levels.

SB continued that 7 years is not an acceptable timeframe for the lifting of the notice and understands reasons for wanting it lifted, the noise was only just acceptable. SB suggested that monitoring could take place in locations other than Glengarry; reiterating MD's comments above that they are looking for ways to communicate back noise issues so that it's tackled promptly. SB suggested that additions to the network may result in a cumulative noise effect, so better processes are required if resolution is required.

RS highlighted the steps and progress made with noise reduction over the past 18 months and explained that even with larger transformers the increase in noise levels is only circa 3-4dB, but 20dB noise enclosure will reduce the noise. RS continued to encourage the upkeep of noise diaries and encouraged contact with SSENT if/when any noise issues are experienced. Community request for further monitoring has been taken on board and is being reviewed, bearing in mind need to add value. Noted the complexities of monitoring with the likes of wind, rain and planes flying over. Considerations are being made on how best this can be done.



6.3

## Next Steps

- Discussions are ongoing with THC regarding lifting of Noise Abatement Notice.
- Following feedback, SSEN -T are considering whether some form of ongoing monitoring / reporting is realistic, practical and would provide information that would be of value.

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5.4

DF expressed disappointment with no wording in slides indicated a commitment to future monitoring, saying it's not about 15 minutes of monitoring, long term trends need to be looked at picking up the whole site not just the new bit of kit. DF suggested that a permanent monitoring site could be identified, such as Steve's business property. DF suggested that monitoring is carried out by an independent company in order to analyse the overall trend. If this is found to be drifting then include more detailed monitoring. DF continued to say that he would like to see this different type of monitoring than that used for lifting of the abatement notice so that trends can be seen and this should be done ahead of changes on site so that they have this data as things do change on site. Stating that Transmission owe this to the community and should come up with something different to provide confidence by speaking and discussing monitoring with the Council's noise consultant, (MAS / Broodbakker).

6.0

### Proposed Beauly 132kV Redevelopment Project

6.1

## Planning Application

### Further Environmental Information

- **Submission of further information February 2022 including:**
  - Winter visualisations without tree foliage
  - Updated landscape mitigation plan
  - Addressing various consultee responses including Environmental Health, Public access, Transport and Forestry
  - Compensatory planting proposals
  - Details of badger sett monitoring
- **Re-advertising March – April 2022**

22

6.2

## Badger Sett Update

- The new Badger Sett has now been completed and approved by NatureScot
- Monitoring is ongoing to determine whether the badgers are using the new sett.
- We are continuing to work closely with NatureScot and The Highland Council .



23

It was suggested that badgers respond well to peanut butter with honey.

6.3

## Road Improvement around Quarry Entrance

Road improvement works anticipated to take place early in the project during mobilisation, site clearance and construction of access track.  
**Works include:**

- Quarry bellmouth to be repaired and re-surfaced
- White lining to be reinstated to bellmouth
- Vegetation on verge to be cut back to improve visibility



24

MD informed that she will be writing to Rob McDonald with suggestions with regard to potential contributions to road maintenance in the area due to the number of smaller vehicles using the road for the past decade.

7.0

Security Fence Project

## Security Fence Project Update

- Fencing works are progressing well with 380m of fence erected. Razor wire will be added as we go along when removing the old fence.
- Construction of ducting and manholes has started and making good progress with 1286m of double 225mm ducting laid with 56 draw pits installed. Works on CCTV bases started.
- We are awaiting agreement from landowner as to what measures we can take to improve the local wildlife habitat.
- There was a small delay to program due to concrete delivery problems which has been recovered.
- Vacuum excavator to be employed over high risk areas of cables and services.
- We would like to thank the community for their ongoing cooperation.

26

SB asked how many CCTV cameras are to be installed, DMc responded around the number 70.

MD asked which landowner has been requested permissions to put up bird boxes, to encourage general wildlife habitat. DMc explained that Lord Lovat has been approached and awaiting response.

### 8.0 Beaulieu Asset Replacement Projects

## Beaulieu Asset Replacement Projects

### Which hydro Sites require transformer replacements within R10-T2 Business Plan?

- Kilmorack
- Aigas
- Culligran
- Deanie

### Why are new transformers required?

- The driver for the projects is asset condition
- Each transformer is circa 60 years old and no longer meet modern standards

### Why are these new transformer compounds offline?

- Transformers are slightly bigger due to our standard framework sizes
- Additional equipment required (e circuit breakers) to ensure business separation from SSE Renewables

### What are the expected Compound Sizes?

- Currently the project team is working with a worst case size of 90m X 60m

28

8.1

## Progress to Date

- Site selection process ongoing (however no options have been selected as preferred at this stage).
- Landowner discussions at preliminary stage
- Environmental studies expected to start within the next month.
- Public Consultation expected in Spring 2022.
- Approximate construction start date end of 2023/ start of 2024

8.2

## Deanie Substation

- Currently 6 options being explored
- Highly sensitive environmental area.
- New compound to be located within 1km of existing site

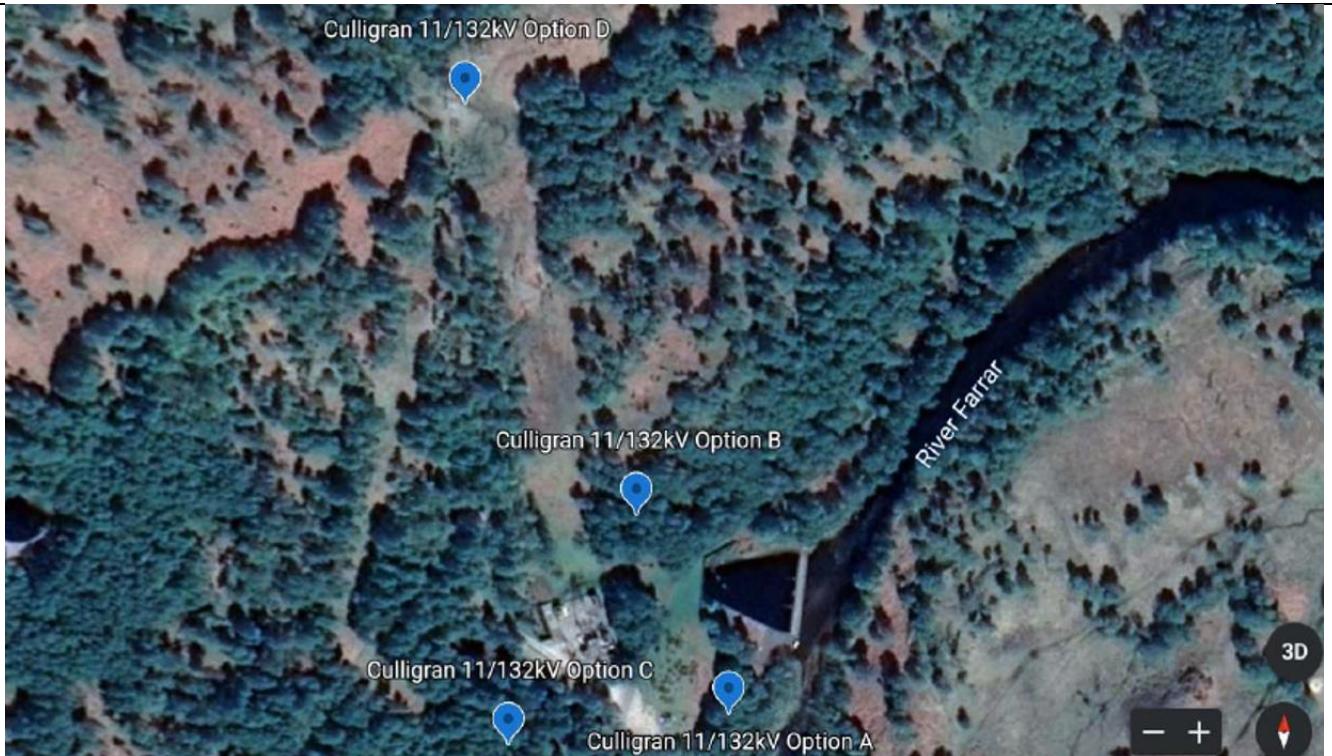




8.3

## Culligran Substation

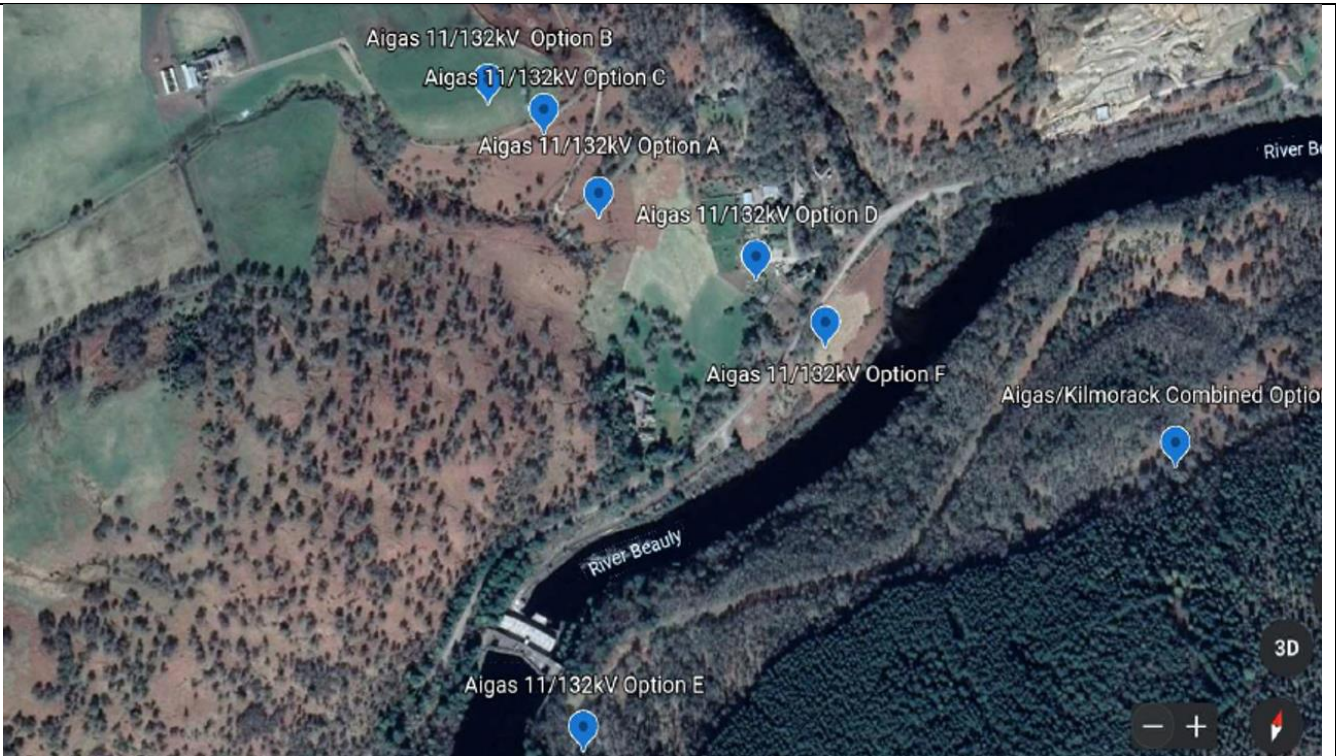
- Currently 4 options being explored
- Highly sensitive environmental area.
- New compound to be located ideally within 1km of existing site



8.4

## Aigas Substation

- Currently 6 options being explored
- Two combined site options along with Kilmorack are also being considered
- Potentially difficult access requirements for all options
- Some options in close proximity to community buildings
- New compound to be located ideally within 1km of existing site



8.5

## Kilmorack Substation

- Currently 5 options being considered
- Two combined site options along with Aigas are also being considered
- New compound to be located ideally within 1km of existing site

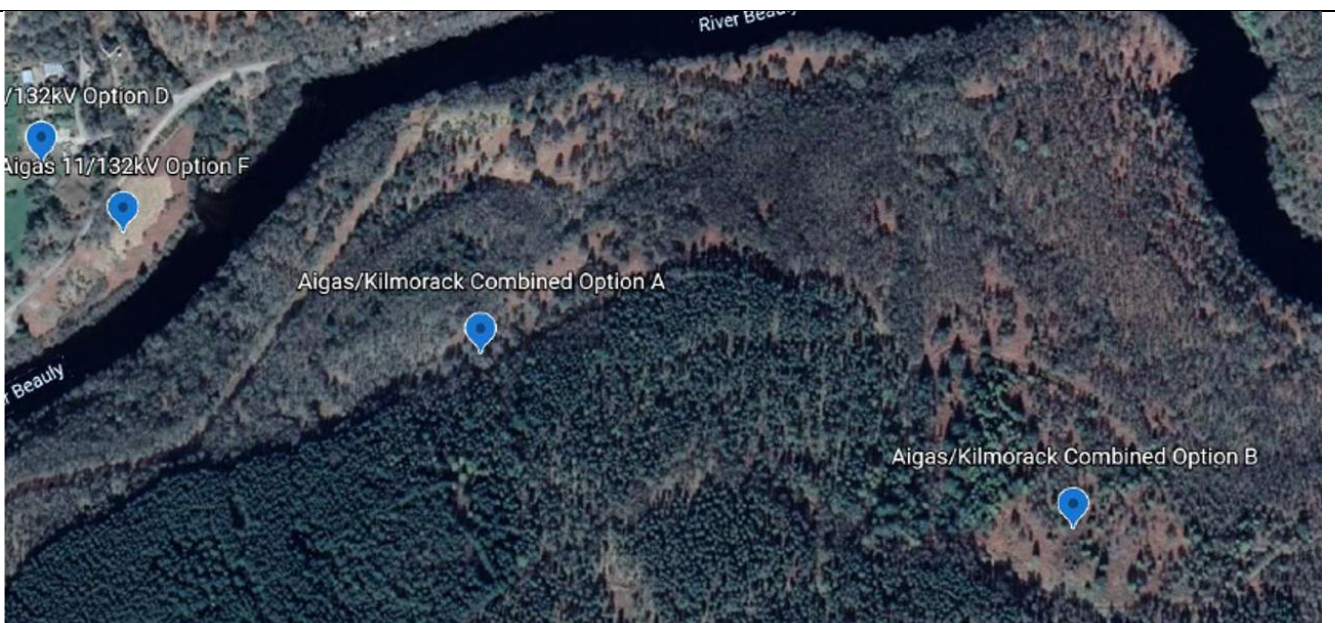




8.6

## Kilmorack/Aigas Combined Sites

- Currently 2 options being explored
- Potential difficulties in obtaining required land
- Distances between one and or both sites may be too great



	<p>SB – In reference to the Kilmorack map said he received comments from landowner who will not accept substation near his land and another from an older lady and daughter under significant stress on seeing the options saying it would affect the remortgaging of the mother's house, other residents are also very concerned.</p> <p>KF explained that the Land Manager has spoken with land owners and this is the optioneering process which is going through as quick as possible with more information planned for around Spring/April. SB offered to go out with engineers to discuss options. MD encouraged Transmission to take up the offer and narrow down the options.</p> <p>SB requested visualisations of the substations and BF added that publishing all options is not the right way to go, the preferred route should be passed through the CLG so that the number can be reduced ahead of consultation.</p> <p>IS said the visualisations he'd seen included some building and a lot not in buildings, adding it would be handy if options were narrowed down and non-starters removed.</p>
9.0	<h2 style="color: #0056b3;">Any Other Business?</h2> <p style="color: #0056b3;">Date of next meeting</p>
	<p>-BF thanked the Transmission team for the presentation and for moving things forward, saying he is now more aware of Transmission's obligations. SC thanked him for the positive feedback with regards to this and will address the Actions from the meeting.</p> <p>-SC suggested May date for next quarterly meeting, MD responded that a meeting to address issues raised needs to be held before. SC agreed to get back to the CLG with proposed date once further information is available.</p>

Actions.

Number	Action / Update	Owner	Open/Closed
1.	2018 Base figures to be provided, requested by BF and provided to CLG	SH	OPEN
2.	Following the tender process, to update CLG on which non-SF6 will be used in the proposed Redevelopment project.	RS	OPEN
3.	How to demonstrate that people and communities are key consultees in our processes	SC/LD	OPEN
4.	Provide summary of noise monitoring report once available to John Stewart	RS	OPEN



5.	What is the process/actions to be taken should noise become an issue so that it can be tackled promptly, without community going via EH and Legal. SSEN T's future monitoring commitments (CLG requested to see trends ahead of any changes at the substation and again once changes are made)	RS/SH/Team?	OPEN
6.	Response to CLG's request for being involved in optioneering process and confirmation as to what stage engagement takes place, in particular with regards to Beaulieu Cluster projects.		CLOSED
7.	Good will proposals for roads and maintenance in the area? Legacy/community benefit.	LD/MD	OPEN
8.	Beaulieu Cluster – substation visualisations requested	KF/LW	OPEN
9.	Interim meeting ahead of next formal CLG meeting	SC	OPEN