

Orkney Electricity Network Reinforcement Stakeholder Consultation Response

August 2014



Introduction

In February 2014 Scottish and Southern Energy Power Distribution¹ (SSEPD) undertook a stakeholder consultation – ‘Connecting Orkney: Electricity Network Reinforcement’ – to hear what stakeholders views were on the next steps for electricity network reinforcement in Orkney.

SSEPD outlined a number of options and explained some of the issues that required consideration including a short summary of the rules which govern its ability to take forward network reinforcement under the regulatory framework.

The consultation provided an outline of:

- developments to date with the Orkney electricity network;
- the regulatory framework and the way different solutions are funded; and
- three potential development options.

SSEPD has now reviewed and analysed the responses received and this document provides a summary of the responses and an outline of the proposed next steps.



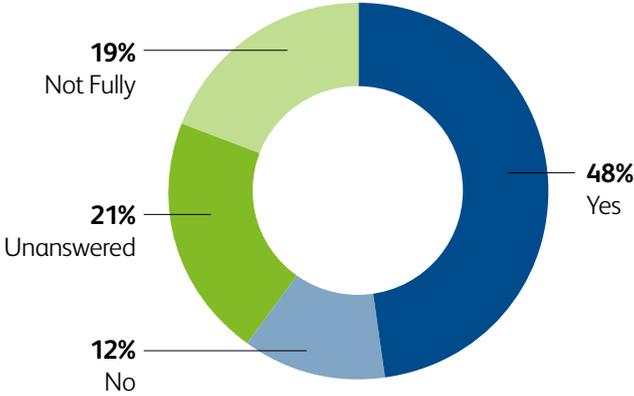
¹ **Scottish and Southern Energy Power Distribution (SSEPD)**, part of SSE plc, owns and maintains two electricity networks in the north of Scotland – **Scottish Hydro Electric Transmission plc (SHE Transmission)** and **Scottish Hydro Electric Power Distribution (SHEPD)**. SHE Transmission owns and maintains the electricity transmission network (132kV and above) in the north of Scotland. The transmission network is used for the transfer of large-scale electricity generation, particularly renewables, to the centres of demand. SHEPD operates the high and low voltage electricity network that distributes electricity to customers’ homes or business premises and facilitates the connection of distributed generation. SSEPD’s first priority is to provide a safe and reliable supply of electricity to our domestic, commercial and industrial customers in the north of Scotland. It is responsible for maintaining, repairing and improving the electricity network. Since SSEPD was formed, it has invested millions of pounds in the electricity infrastructure. SSEPD does not sell electricity to customers – that is the role of energy suppliers.

Consultation Responses

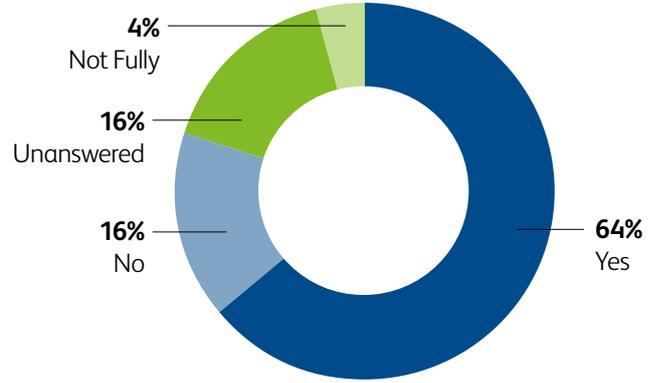
A total of 42 responses were received relating to the Consultation.

The responses ranged from detailed letters to comments forms completed at public information events held in Kirkwall.

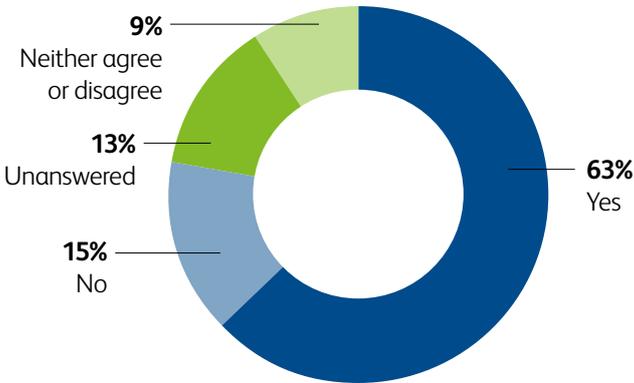
Q1
Has this consultation helped you understand the options for reinforcement of Orkney’s electricity network?



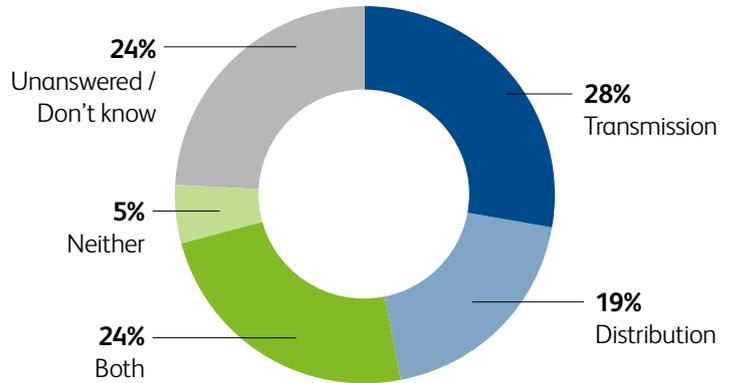
Q2
Were you aware of the process and requirements for transmission distribution reinforcement and how they are funded?



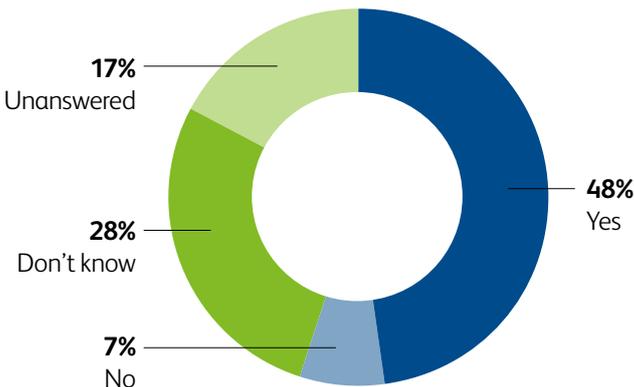
Q3
Do you think a new distribution link should be developed to facilitate the connection of further renewables?



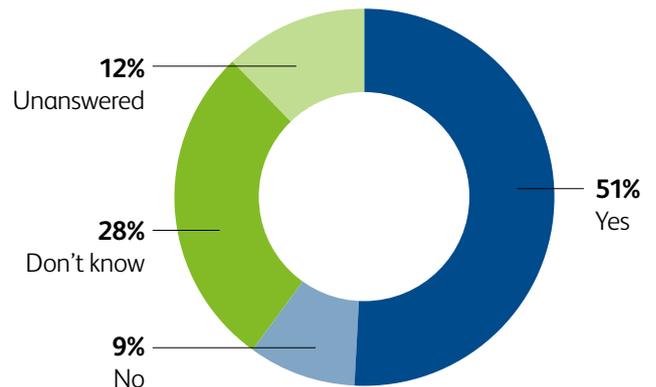
Q4
In light of the stage of development of marine technology, do you think transmission or distribution reinforcement is most appropriate?



Q5
Organisations which have examined the framework for connecting emerging technologies, such as wave and tidal, to the electricity network have suggested there may be grounds for adopting a different approach. Do you believe there is a case for this?



Q6
Do you believe there are other options for mainland reinforcements that SSEPD has not considered?



Consultation Summary

Below is a summary of the common themes from the responses.

Timing

- A number of respondents felt that it was taking too long for a decision to be made and that talking needs to be replaced with decisions and action – positive or negative.
- There were requests for a clear way forward involving a mix of all 3 options.

Public Support

- The general feeling was that marine is not likely to be viable in any material way for another 5 – 10 years and that the focus should be on attracting additional onshore wind.
- Developers need to be more upfront on their exact requirements and capabilities.
- One response described wave technology in a negative way and said that “Orkney has not got the potential to site new wind farms”.
- One responder advocated that nothing is done until tidal is ready to be deployed in a meaningful way and the thought of large scale onshore wind and transmission lines on Orkney was “unthinkable”.
- This point was echoed by other respondents.

Priority

- A number of respondents felt that the focus should be on sorting out the existing RPZ “here and now” related issues, in particular the unforeseen impact of micro-generation on forecast curtailment figures, and the need to strengthen the existing on-island network or operate it in different mode².
- There was a general feeling that this should be the priority ahead of any reinforcement.

Design

- A number of respondents would like SSEPD to progress with reinforcement in 2 stages – distribution first closely followed by transmission (i.e. they “are not mutually exclusive”).
- There was recognition that distribution reinforcement was unlikely to provide sufficient capacity.
- Stakeholders recognised that the regulatory framework means that any distribution reinforcement for exporting energy would require external funding arrangements (for example Green Investment Bank or European Union funding) to make it economic for developers.
- A number of respondents stated they had hoped the consultation would have included alternative transmission options to the proposed Bay of Skail connection, possibly by strengthening the network in and around Hoy and/or South Ronaldsay with a link to the Scottish mainland.

Funding

- There was a significant amount of confusion on how network reinforcement should be paid for, particularly a new export cable for developers, and how it will impact consumers’ utility bills.
- One suggestion was for an Orkney company to be set up so that the community could invest in, so any profits would stay on the Islands.
- There was a view from some respondents that reinforcements should be funded by those who trigger them via the established rules and methodologies.

Political

- There was a strong view that Orkney should be treated as a special case given the huge potential that exists in and around Orkney for renewable generation.
- A number of respondents recognised that SSEPD had to operate within the current regulatory framework but felt that there was a need for greater political commitment (both UK and Scottish) to support case for reinforcement.



² For example, Seasonal Line Ratings and integration and utilisation of storage battery.

The Options

The Consultation presented three development options, these were:

- *“Option 1 – Transmission reinforcement”*: SHE Transmission has developed proposals for a 220kV AC 180MW subsea cable connection between Dounreay and Bay of Skail; new substations at Bay of Skail Finstown, Crook and Newark Bay; and interconnecting 132kV circuits incorporating a mix of overhead line and underground / subsea cable. This option has been developed to meet the needs of the contracted marine generation.
- *“Option 2 – Distribution reinforcement”*: The Consultation included an indicative cost for distribution reinforcement – circa £30m for a single 30MW 33kV subsea connection – and recognised the volume of contracted generation exceeded the capability of a single reinforcement.
- *“Option 3 – Making best use of the existing network”*: If, for whatever reason, network reinforcement is not possible at this time consideration should be given to how best to use the existing network. SSEPD is already seeking ways of amending the ANM to help address these issues, however, it would require agreement from all currently connected parties.

The consultation document outlined the ‘trigger’ for the proposed transmission reinforcement – the volume of contracted marine generation – and discussed the challenges that this option would face in securing regulatory approval due in part to the maturity of the generation technology.

Whilst the majority of respondents felt that transmission reinforcement was the best solution, a number of responders indicated that they wanted a two-phase approach, with a distribution solution first followed by a transmission connection at a future date. However it was also recognised that distribution reinforcement was unlikely to provide sufficient capacity and would likely be uneconomic for developers.

A number of respondents suggested that the existing distribution ANM scheme should be changed to address issues related to excessive curtailment, however, it would require agreement from all currently connected parties.



Recent Developments

While the current level of contracted generation³ would support the case for the proposed transmission reinforcement a great deal of uncertainty remains regarding the actual MW volume and associated deployment profile. Until this is addressed SSEPD cannot rule out the possibility of distribution reinforcement⁴; even as an interim measure ahead of transmission reinforcement. Over the last 4 months SSEPD has held bilateral discussions with contracted developers to understand their current requirements. SSEPD also invited potential developers to contact them if they were interested in pursuing a project on Orkney. Interest totalling 220MW was received – split 177MW of onshore wind and 43MW of marine.

It is widely recognised that securing regulatory approval for a reinforcement (whether transmission or distribution) at this time would be extremely difficult if it were based solely on marine technologies. It is therefore extremely important that every effort is made to realise as much of the 177MW of onshore wind as possible. SSEPD is now working with OIC to understand the level of consent to be expected to from this volume of potential applications, particularly from onshore wind.

Scottish Islands Renewables Delivery Forum

In addition, in June 2014 the UK and Scottish Government co-chaired the first meeting of the Scottish Islands Renewables Delivery Forum. Recognising that there are some significant challenges in connecting the Scottish Islands to the mainland transmission network, the Scottish Islands Renewables Delivery Forum was established to identify and overcome the outstanding political, regulatory, technical and commercial hurdles (the “enablers”).

At the forum there was widespread recognition that no single party can resolve the outstanding issues alone, and as a result, the Forum membership includes a wide range of stakeholders from across the industry⁵. The establishment of the Delivery Forum represents a significant step towards identifying tangible solutions for the Scottish Islands.

Clarity on key policies is becoming clearer, for example:

- On 11 July 2014 Ofgem confirmed the details of the new transmission charging methodology that will come into force in April 2016 and would be applicable to transmission connected developers⁶ on the Islands, including Orkney.
- In May, and more recently in July, DECC issued further guidance on the implementation of its EMR proposals, in particular the CfD allocation methodology and technology groupings.

However, DECC has recently announced that the onshore wind island strike price was not included in the State Aid clearance published recently by the European Commission and therefore this policy position is still subject to state aid approval. Many of the remaining key enablers (both general and Orkney specific) will be taken forward by the Scottish Islands Renewables Delivery Forum.

However, due to the changing picture on the volume of marine energy seeking to connect into the transmission network and the requirement to put forward the optimum reinforcement (i.e. size, design, technology, programme and cost) SHE Transmission will review the proposed timescale for the transmission connection to reflect current developer requirements. This is likely to result in the proposed transmission reinforcement for Orkney being delivered no earlier than 2020.

It has been confirmed that new formal applications for connection to the network on Orkney or in Caithness will be offered a connection date no earlier than 2020, as they would be required to await the completion of wider transmission reinforcement works on the UK mainland.

New Submarine Cable Policy

Marine Scotland has recently introduced a policy of requiring submarine cables to be buried. This may have a significant effect on the cost of submarine cable works, and may make some developments uneconomic. We continue to discuss with Marine Scotland how the perceived benefits can be justified by the substantially increased costs. However the indicative costs of distribution reinforcement works will need to be revised if this policy change is not retracted.



³ Currently 770MW, split 180MW and 590MW between proposed AC and HVDC transmission reinforcements respectively.

⁴ Any distribution solution would need to include multiple circuits as a single circuit would not be sufficient to meet the entire Island requirements.

⁵ Representatives from Scottish Government, DECC, Ofgem, HIE, SHE Transmission, NGET, developers and Island Councils.

⁶ The applicability to distribution developers is currently under review by NGET.

Conclusions

“Option 1 – Transmission reinforcement”:

- Presently there is insufficient certainty surrounding the deployment of the current contracted marine generation to justify early investment in transmission reinforcement.
- The 220MW of interest is not sufficiently advanced through the grid application or planning process in order to support the case for reinforcement. However, transmission reinforcement looks likely to be the most viable option to provide the anticipated final level of MW capacity.
- The current transmission developments are not sufficient to accommodate the 220MW in addition to the current contracted marine developments.
- It may be possible to manage uncertainty of both marine and onshore wind by connecting via a transmission Active Network Management arrangement.

“Option 2 – Distribution reinforcement”:

- A distribution solution may offer additional capacity to a part of the existing distribution network on Orkney, but would not provide a solution for the network as a whole.
- A distribution solution would be unlikely to be an appropriate or technically viable solution to a significant element of the 220MW.
- New distribution connections could not be made before 2020 under the current GB queue arrangements due to the need to await completion of wider transmission reinforcement works on the mainland.

“Option 3 – Making best use of the existing network”:

- Presently Orkney is at the forefront of electricity network innovation and smart grids. SSEPD is currently developing for consideration Seasonal Line Ratings to increase network capacity, beyond this there is no other short term solution.



The Next Steps

In the coming months SSEPD will:

Action	Lead Parties	Timescale
Hold a series of consultation dissemination events ⁷ in Kirkwall.	SSEPD	August 2014
Review the marine generation background (MW and deployment profile) with existing contracted parties.	SSEPD Developers	Ongoing
Work with developers and Orkney Islands Council to understand the volume of generation that could be accommodated within planning and environmental constraints and work with National Grid and Ofgem to look at how the “Note of Interest” volume of generation (circa 220MW) can help to support the case for network reinforcement.	SSEPD OIC NGET Developers	Initial discussions by September 2014
Prepare outline designs and budget cost estimates for each scheme that forms part of the 220MW. This will allow these potential developers to gauge financial viability of their respective projects. Due to the current level of capacity noted, this distribution design would be developed based on a new Grid Supply Point(s) on Orkney mainland. It is likely that there may be several iterations of design and costings as some developers decide not to proceed.	SHEPD	Ongoing
Work with National Grid and Ofgem to consider how a transmission Active Network Management scheme may offer mitigation against uncertainty, whilst making best use of new assets by making capacity available to those that are best placed to use it.	SSEPD NGET Ofgem	Initial discussions by September 2014
Prepare a consolidated contracted generation background and review the suitability of the proposed transmission reinforcement solution. It may be necessary, from an economic and efficient perspective, to consider alternative reinforcement options, both transmission ⁸ and/or distribution.	SSEPD	Ongoing – Initial assessments underway
Take part in a working group led by Scottish Government to look at funding options for reinforcement to support the marine sector.	Scottish Govt	Meeting provisionally arranged for 27 August 2014
Work with members of the Scottish Islands Renewables Delivery Forum to build investment certainty by addressing the identified “enabling” actions.	DECC Scottish Govt SHE Transmission NGET Ofgem Developers	Next meeting 25 September 2014

⁷ These will be held in the Ayre Hotel in Kirkwall on the 11th and 12th August.

⁸ Including, if appropriate, transmission Active Network Management.

