

All interested parties

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Dear stakeholder

### **Update on the SWW Final Needs Case for the Shetland electricity transmission project and potential next steps**

This letter provides an update on the current Final Needs Case submission for Scottish Hydro Electric Transmission's (SHE-T) proposed project to build a 600MW electricity transmission link between the Shetland Isles and mainland Scotland.<sup>1</sup>

SHE-T's Final Needs Case submission of September 2018 stated that the need for the project was conditional upon Viking Energy Wind Farm<sup>2</sup> being awarded a Contract for Difference (CfD) in the 2019 auction. In our March 2019 consultation we set out that, subject to SHE-T's stated condition being met, we were minded to approve the Final Needs Case as being sufficiently well justified and value for money.

In light of the outcome of the CfD auction,<sup>3</sup> this condition has not been met. We consider in these circumstances that, before reaching a decision on the Final Needs Case, it would be in the interests of consumers for Ofgem to consider any revised Final Needs Case that SHE-T may wish to submit. Any revised Final Needs Case submission will require review and consideration to ensure it provides appropriate evidence to support the proposal and that it represents long-term value for money for Great Britain (GB) consumers. If we receive a revised submission we will endeavour to consider it as soon as possible and will consult on our views on the revised Final Needs Case submission ahead of reaching a decision.

Today we have also published an update on the Final Needs Case for the Western Isles electricity transmission project. We expect to publish an 'in principle' decision on Scottish Hydro Electric Power Distribution's (SHEPD) proposals to contribute financially towards a proposed electricity transmission link to Shetland in November.

### **Context**

The Shetland Isles project is a proposed technical solution for connecting the Shetland Isles to the transmission network on mainland Great Britain (GB).

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<sup>1</sup> Herein referred to as 'the Shetland Isles project'.

<sup>2</sup> Viking Energy Wind Farm has an expected capacity of 412-457MW, depending on planning consents secured. Viking Energy Wind Farm is owned by SSE (Scottish and Southern Energy). SHE-T is part of Scottish and Southern Energy Networks (SSEN) which is a subsidiary of Scottish and Southern Energy (SSE).

<sup>3</sup> The full CfD auction results are available here -

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/832924/Contracts\\_for\\_Difference\\_CfD\\_Allocation\\_Round\\_3\\_Results.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832924/Contracts_for_Difference_CfD_Allocation_Round_3_Results.pdf)

In September 2018 SHE-T submitted to us its Final Needs Case for a c.£700m<sup>4</sup> 600MW transmission link, to be delivered in 2024, when SHE-T is contracted to connect some local generators on the Shetland Isles. SHE-T's Final Needs Case submission stated that the need for the project was conditional upon Viking Energy Wind Farm<sup>5</sup> being awarded a CfD in the 2019 auction. SHE-T's submission stated that there is significant renewable generation potential on the Shetland Isles, particularly onshore wind, and that this potential generation could only be realised if a new transmission link to the Shetland Isles was constructed (as without a link no new generation on the Shetland Isles can connect to the transmission network).

Following assessment of SHE-T's submission and underlying cost-benefit analysis (CBA), we consulted on a minded-to position in March 2019. In that consultation we outlined that we considered there to be a technical and economic need for the Shetland Isles project (dependent on the volume of generation which came forward), and that we were minded-to approve the Final Needs Case if we could be confident that GB consumers were appropriately protected from the risks and costs associated with building an underutilised transmission link. We set out that we were minded-to approve the Final Needs Case subject to the following conditions:<sup>6</sup>

*"For Ofgem to approve the Final Needs Case for the proposed 600MW Shetland transmission connection, SHE-T must demonstrate, by the end of 2019, that Viking Energy Wind Farm has been awarded a Contract for Difference in the 2019 CfD Auction."*

Our consultation also outlined a minded-to position to apply the Competition Proxy Model (CPM) to SHE-T's delivery of the Shetland Isles project. As we are not approving the Final Needs Case for the project at this time, the delivery model is not considered further in this update.

We received 79 responses to the consultation which addressed the Final Needs Case submission. These came from a mixture of stakeholders, including local generators, Shetland residents, local bodies, politicians and renewable energy associations.

An overview of the key aspects of responses received to our consultation can be found in Annex 1 and a brief summary of responses can be found below. If SHE-T brings forward a revised submission for the Shetland Isles project, where appropriate we will consider responses to our March 2019 consultation in considering any such revised submission.

### *Summary of responses*

Most respondents agreed with the need to reinforce the network on the Shetland Isles to allow generation projects to progress. However, a quarter of respondents expressed opposition to the proposed transmission reinforcement (and/or more generally to windfarms on the Shetland Isles), raising concerns in relation to environmental impact and visual amenity, and on the basis that the link would provide less/little value for money for consumers compared to connecting generation in other parts of GB.

A small number of respondents supported the generation scenarios underpinning the CBA provided by SHE-T as part of its Final Needs Case submission and also supported SHE-T's proposal for a 600MW link. However, most respondents (including a range of local generators on the Shetland Isles) argued that the generation scenarios were too low and underestimated the number of wind generation projects already in development. Those

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<sup>4</sup> SHE-T previously estimated the capital costs of the 600MW HVDC link as £709m in its Final Needs Case submission. Following further procurement activity SHE-T updated the estimated capital cost to £649m.

<sup>5</sup> Viking Energy Wind Farm has an expected capacity of 412-457MW, depending on planning consents secured. Viking Energy Wind Farm is owned by SSE (Scottish and Southern Energy). SHE-T is part of Scottish and Southern Energy Networks (SSEN) which is a subsidiary of Scottish and Southern Energy (SSE).

<sup>6</sup> As shown in paragraph 2.40 of our consultation -

[https://www.ofgem.gov.uk/system/files/docs/2019/04/shetland\\_consultation\\_updated\\_30042019.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/04/shetland_consultation_updated_30042019.pdf)

respondents argued that an 800MW or 1000MW link would be more appropriate as it would avoid the need for an additional link in the near future if only a 600MW link were approved. Several of those respondents also argued that Ofgem should wait until after the results of the 2019 CfD auction before making its decision on the Final Needs Case so that it could take the results of the auction into account when deciding whether a larger (than 600MW) link would be justified.

### *CfD auction*

On 20<sup>th</sup> September 2019, the department for Business, Energy and Industrial Strategy (BEIS) published the results of the Autumn 2019 CfD auction. These set out which projects were successful in the 2019 CfD auction. No generation projects on the Shetland Isles were successful in the 2019 CfD auction.

### ***Our updated position on the Final Needs Case submission***

In accordance with the Strategic Wider Works (SWW) condition in SHE-T's licence, we have been considering whether the current Final Needs Case submission, technical scope and timing of delivery of the proposed Shetland Isles project are sufficiently well justified and represent long term value for money for existing and future consumers.

As Viking Energy Wind Farm has not been awarded a CfD in the 2019 auction, this condition has not been met. Nor has an equivalent level of generation brought forward by other generators on the Shetland Isles been awarded a CfD. We consider in these circumstances that, before reaching a decision on the Final Needs Case, it would be in the interests of consumers for Ofgem to consider any revised Final Needs Case that SHE-T may wish to submit.

### ***Further detail***

Under SWW, we assess large transmission projects intended to extend and strengthen the transmission network, which are proposed by SHE-T and the other transmission owners (TOs). It is for each TO, working with the electricity system operator (ESO) as appropriate, to identify what system reinforcements may be needed to meet the needs of existing and future consumers.

We would expect SHE-T to continue working alongside the ESO to consider the appropriate next steps for ensuring an economic and efficient transmission network. This may be expected to include engaging with generators in light of the CfD auction results and with other stakeholders as appropriate, including for example Scottish Hydro Electric Power Distribution (SHEPD).<sup>7</sup>

If the outcome of that process is a revised Final Needs Case submission by SHE-T, in accordance with the SWW condition in SHE-T's licence, we will consider whether the Final Needs Case is sufficiently well justified and represents long term value for money for existing and future consumers. We will endeavour to consider any such revised submission as soon as possible and we will consult on our updated views on any revised Final Needs Case submission ahead of reaching a decision.

It is for TOs to decide what information is necessary to support a Final Needs Case and to submit the same in support of their submission. SHE-T may wish to consider in any revised submission whether its current plans for the transmission link remain appropriate or if an alternative size of link or alternative conditions for approval should be proposed. Ofgem will consider whether any revised submission from SHE-T is sufficiently well justified and represents long term value for money for existing and future consumers.

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<sup>7</sup> Scottish Hydro Electric Power Distribution (SHEPD) is the company responsible for securing supply on Shetland.

In any revised Final Needs Case submission we would consider it important that the analysis underpinning SHE-T's previous submission was appropriately updated. This is not limited to, but may include:

- Robust evidence to demonstrate that the generation underpinning any Final Needs Case submission is likely to go ahead;
- Updated cost benefit analysis if appropriate, for example considering whether, in light of the CfD auction results, changes are required to inputs to the CBA; and
- Consideration, as appropriate, of views of stakeholders, including where relevant responses to our March-2019 consultation (summarised in this letter and published on our website<sup>8</sup>).

While we will endeavour to consider any potential revised Final Needs Case submission as soon as possible, the length of the review and decision-making process will be affected by the quality of the information and analysis we receive and the robustness of any case put forward.

### ***Security of supply on Shetland***

As set out in our March 2019 consultation on the Shetland Isles project<sup>9</sup> and in our May 2019 consultation on SHEPD's proposals to contribute towards proposed electricity transmission links to the Shetland Isles, Orkney and the Western Isles,<sup>10</sup> there are interactions between a potential transmission link between the Shetland Isles and the Scottish mainland and future security of supply on the Shetland Isles, particularly in the context of Lerwick Power Station approaching the end of its operational life.

SHEPD has proposed that it contribute (on behalf of its electricity distribution customers)<sup>11</sup> to the cost of the proposed Shetland Isles transmission link, which it considers would reflect the fair value of the benefit to its customers from a transmission link securing supply on Shetland. As set out further above in this letter, we expect to publish an 'in principle' decision on SHEPD's proposals in November.

We will work with SHE-T and SHEPD on the interactions between a potential transmission link and future security of supply on the Shetland Isles to seek to ensure an economic and efficient outcome for existing and future consumers.

We would be happy to discuss the content of this letter. Please contact us at [NTIMailbox@ofgem.gov.uk](mailto:NTIMailbox@ofgem.gov.uk).

Yours sincerely,

Cathryn Scott  
Director, Wholesale Markets & Commercial

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<sup>8</sup> We received 27 confidential responses to our consultation which are not summarised here or published on our website, non-confidential responses are published on our website and available here - <https://www.ofgem.gov.uk/publications-and-updates/shetland-transmission-project-consultation-final-needs-case-and-delivery-model>

<sup>9</sup> Paragraphs 1.14 – 1.16 of our March Consultation on the Shetland Transmission Project - [https://www.ofgem.gov.uk/system/files/docs/2019/04/shetland\\_consultation\\_updated\\_30042019.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/04/shetland_consultation_updated_30042019.pdf)

<sup>10</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/05/shepd\\_contribution\\_consultation.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/05/shepd_contribution_consultation.pdf)

<sup>11</sup> All distribution customers in the SHEPD region (north of Scotland).

## **Annex 1- Overview of consultation responses on the Final Needs Case**

We provide below a brief overview of the responses received to our March 2019 consultation. This overview is limited to responses regarding the Final Needs Case. We received 80 consultation responses in total, 79 of which responded to our questions regarding the Final Needs Case. These came from a mixture of stakeholders, including local generators, Shetland residents, local bodies, politicians and renewable energy associations. All of the non-confidential responses to our consultation have been published on our website.<sup>12</sup>

### Need for reinforcement

Most respondents agreed with the need to reinforce the network on the Shetland Isles to allow generation projects to progress, stating that the current network is not sufficient to accommodate any new potential generation projects.

Over half of the respondents provided views on the urgency of finding a solution for the Shetland Isles and views on ongoing concerns surrounding the Lerwick Power Station approaching the end of its operational life.

Many respondents expressed their support for a transmission link, detailing that in their view the high carbon footprint currently associated with the Shetland Isles could be cost effectively reduced with a grid connection to mainland GB and the significant renewable generation resource available. In addition to the potential carbon benefits raised, respondents also flagged that they consider the renewable generation projects will benefit Shetland's future economy.

However, a quarter of respondents expressed their opposition to the proposed transmission reinforcement. Respondents predominantly stated that the proposed transmission cable is too large for Shetland and alongside this set out their opposition to the development of wind farms on Shetland in general, raising environmental, visual and health concerns. Several of these respondents also argued that it would be cheaper to build generation projects elsewhere in GB and avoid the need for the transmission link altogether, or look at alternative solutions for Shetland such as smaller scale embedded generation or a more direct replacement for Lerwick Power Station.

A small number of respondents also raised concerns in relation to the proposed design of a single cable solution for Shetland and questioned the energy security of this option. Several respondents also went on to query how the proposed Shetland transmission link would interact with the Caithness-Moray transmission link and whether the Caithness-Moray link has sufficient capacity available to allow the Shetland transmission link to operate at full capacity.

### Generation background and scenarios

In relation to the generation scenarios presented by SHE-T in its Final Needs Case submission, a small number of the respondents stated that they consider those represented a reasonable range of potential generation outcomes on Shetland.

However, most of the respondents (including a range of local generators on the Shetland Isles) argued that the generation scenarios are too low and underestimate the amount of wind generation projects already in development. Many of the respondents stated that there is already approximately 800MW of projects in development on the Shetland Isles, with approximately 600MW of projects already consented and a further 200MW in early development. Respondents also raised concerns that the generation scenarios only assume relatively modest growth for renewable technologies such as small scale solar, tidal and

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<sup>12</sup> <https://www.ofgem.gov.uk/publications-and-updates/shetland-transmission-project-consultation-final-needs-case-and-delivery-model>

floating offshore wind. Those respondents said that, in their view, more significant growth in wider technologies such as tidal, floating wind, as well as future interconnection to Norway should also be considered. A number of respondents commented that the ESO should look at a wider range of generation scenarios within its analysis on the proposed Shetland Isles project and take into account the most up to date Future Energy Scenarios (FES) available.<sup>13</sup> More generally, a number of respondents commented that they think the growth level assumed in the generation scenarios up to 2035 is modest and said that this does not align with Ofgem's assessment of the Caithness Moray link in 2014, suggesting that Ofgem's generation growth projection for that project was 7% per annum. Several respondents were also concerned that the generation scenarios do not consider wider policy reports and positions, such as the recent BEIS Energy and Emissions report published in April 2019.

Several respondents flagged potential upcoming changes to forward looking network charges<sup>14</sup> and noted that these may create uncertainty for existing distribution-connected generation projects as well as the pipeline of future project development.

### Cost Benefit Analysis (CBA)

Several of the respondents asserted that the use of a constraints-based CBA<sup>15</sup> methodology to justify the 'need' for the Shetland Isles link is an established industry approach and that the outcome is consistent with the ESO's Network Options Assessment report issued in January 2017 which stated that the Caithness–Shetland 600MW HVDC link was the "most economic, efficient and coordinated option" to allow the "attractive renewables resources" on the Shetland Isles to be developed.<sup>16</sup>

A number of respondents flagged that they consider the local benefits associated with the proposed HVDC link should be more fully considered in the Final Needs Case assessment process, and flagged their views of the additional benefits associated with an 800MW or 1000MW transmission link over a 600MW link.

A small number of the respondents argued that they consider the CBA has been run on the basis that an HVDC transmission link is essential for the Shetland Isles and that the Remote Island Wind projects are already confirmed. Respondents stated that in their view the Steady State scenario, which should look at non-HVDC options, has not been considered fully. Respondents suggested that the CBA should have included an assessment of a more self-contained energy grid for Shetland, as at present, but with a replacement for the power station with continued inputs from local scale renewables.

On the results of the CBA, several of the respondents commented specifically on the additional information contained in the ESO's Cost Benefit Analysis Report.<sup>17</sup> In particular, respondents noted that the earliest in service dates (EISDs) for the 600MW HVDC and 800MW HVDC options are 2024 and 2025, respectively. Respondents commented that this

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<sup>13</sup> The CBA submitted by SHE-T as part of the current Final Needs Case included Future Energy Scenarios (FES) 2017. The FES are developed annually by National Grid in its role as Electricity System Operator. The four Future Energy Scenarios presented by the ESO in 2017 were Steady State (SS), Consumer Power (CP), Slow Progression (SP) and Two Degrees (TD). In July 2019 the ESO presented FES 2019, the four Future Energy Scenarios presented by the ESO in 2019 were Steady State (SS), Consumer Evolution (CE), Steady Progression (SP) and Community Renewables (CR).

<sup>14</sup> As outlined in Ofgem's December 2018 decision on the scope of the Electricity Network Access and Forward-looking Charges Significant Code Review (SCR), we are reviewing whether distribution-connected generation should face the same transmission forward-looking charging arrangements as transmission-connected generation. <https://www.ofgem.gov.uk/publications-and-updates/electricity-network-access-and-forward-looking-charging-review-significant-code-review-launch-and-wider-decision>

<sup>15</sup> Constraint costs are payments made to generators by the ESO to stop generators producing electricity. It will make these payments when the electricity transmission network in a particular area does not have the capacity to safely transport all of the electricity that is being produced in that area.

<sup>16</sup> <https://www.nationalgrid.com/sites/default/files/documents/8589938717-Network%20Options%20Assessment%202016-17.pdf>

<sup>17</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/05/eso\\_report\\_-\\_shetland.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/05/eso_report_-_shetland.pdf)

means that the CBA includes constraint costs for the 800MW HVDC option for wind generation over an 18 month period, the period of time associated with the later delivery of the 800MW HVDC option compared to the 600MW HVDC option. Respondents questioned whether any delay costs associated with the extra time period should be included in the CBA.

Several respondents also commented that when the EISDs for the 600MW HVDC and 800MW HVDC options are aligned, the 800MW HVDC link becomes the optimal option (the Least Worst Regret option). Respondents raised concerns in relation to the timescales set out by SHE-T for delivery of the 800MW HVDC link, and stated that they consider more evidence is required to validate that a 800MW HVDC link would take materially longer than a 600MW link to complete.

Respondents were generally critical of the assessment SHE-T had carried out on options for the transmission reinforcement and suggested that if a 600MW transmission link progresses, SHE-T has not acted in a fair and reasonable fashion to minimise costs to consumers and has also restricted the development of consented projects on the Shetland Isles.

#### Ofgem's minded-to position

In response to Ofgem's minded-to position, most of the respondents set out their support for a transmission link, however a number of respondents objected to the transmission link in its entirety. Many of the respondents who disagreed with the proposed reinforcement for the Shetland Isles raised concerns that proceeding with an HVDC link will prove to be very expensive for GB consumers and is not appropriate for the scale (ie size/population) of the Shetland Isles, stating that instead smaller on-island solutions could be looked at.

Only a relatively small number of respondents supported the 600MW transmission link, with the majority of respondents in favour of either an 800MW or 1000MW transmission link. Several of the respondents who expressed their support for a larger transmission link, called for the Final Needs Case submission to be sent back to SHE-T by Ofgem on the basis that a larger link should be proposed. Many of the respondents raised concerns that progressing with a 600MW link now, would mean a second link would be required relatively soon after the proposed 600MW transmission link. Those respondents said that discussions with SHE-T on a second transmission link had already begun.

Several of the respondents calling for the larger transmission link options also expressed other concerns. Firstly, those respondents expressed concerns that, as SHE-T is a subsidiary company of SSE and SSE is one of the partners in the Viking Energy Windfarm project (VEWF), SHE-T is putting forward the transmission option that best facilitates VEWF as quickly as possible. Many of the respondents also questioned the timing for the decision on the Final Needs Case, and whether this should be made after the Autumn 2019 CfD auction results are known, and not in summer 2019 as set out in the consultation.

More generally several respondents also called for more clarity on the financial contribution towards the cost of the link proposed by SHEPD and how this relates to expected transmission network charges and related costs for those bidding into the CfD 2019 across the Scottish islands.

On the conditionality proposed for approval of the 600MW transmission option, a number of respondents drew comparison to the total capacity of generation projects as a proportion of the link capacity across the Scottish Islands projects.<sup>18</sup> Respondents highlighted that the conditions for approval proposed by Ofgem on the Orkney Final Needs Case<sup>19</sup> equate to

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<sup>18</sup> Final Needs Case submissions have been made by SHE-T for transmission connections between mainland GB and Orkney, Shetland and the Western Isles.

<sup>19</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/09/conditional\\_decision\\_on\\_orkney\\_final\\_needs\\_case\\_2.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/09/conditional_decision_on_orkney_final_needs_case_2.pdf)

approximately 61% (derived from the ratio of generation required for approval against the size of the link), whereas the equivalent on Shetland is far higher (69%-76%<sup>20</sup>). Those respondents set out that Ofgem should therefore approve a larger link (800MW) on Shetland if VEFW and one of the additional transmission projects on the Shetland Isles won CfDs in the 2019 CfD round, as this would equate to the same ratio of generation against the link size as proposed on the Orkney project.

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<sup>20</sup> This range is due to the Viking Energy Wind Farm project having an expected capacity of 412-457MW, depending on planning consents secured.