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Dear James

Shetland Transmission Project - Ofgem Consultation on proposed Final Needs Case and Delivery Model

Viking Energy Wind Farm LLP (VEWF) is the developer of the consented 103 turbine Viking Windfarm in Shetland and is in the process of mobilising in expectation of commencing construction in Q3/Q4 2020. This document responds to the consultation issued by Ofgem on the Shetland transmission project, proposed Final Needs Case and Delivery Model.

VEWF strongly supports Ofgem's minded-to approve decision of the 600MW HVDC subsea transmission link, proposed by Scottish Hydro Electric Transmission (SHE-T), which will connect Shetland to the wider GB electricity transmission network for the first time.

On Wednesday 17th June SSE confirmed¹ that it has approved the final investment decision for the 103 turbine wind farm. Further, as required, VEWF stands ready to provide clear evidence which will meet the following requirements outlined by Ofgem:

1. Evidence of the Final Investment Decision (FID).
2. Evidence of project information underpinning FID.
3. Evidence of FID triggering major development milestone(s).

VEWF welcomed Ofgem's decision in December 2019, confirming that upon approval of the Final Needs Case for the proposed Shetland transmission project, SHEPD's proposal to contribute, on behalf of demand customers, towards the cost of transmission links to the Scottish islands will also be approved. The level of contribution proposed by SHEPD reflects the benefits to demand customers of using the Shetland transmission link to secure demand in Shetland in the long term, at best overall value to GB electricity customers. We support the requirement for appropriate implementation of the contribution proposal via CUSC

¹ FINAL INVESTMENT DECISION FOR VIKING ONSHORE WIND FARM - [HTTPS://WWW.SSE.COM/NEWS-AND-VIEWS/2020/06/FINAL-INVESTMENT-DECISION-FOR-VIKING-ONSHORE-WIND-FARM/](https://www.sse.com/news-and-views/2020/06/final-investment-decision-for-viking-onsshore-wind-farm/)



modifications CMP 337 and CMP 338. VEWF can confirm that successful implementation of SHEPD's proposal is a key enabling prerequisite in VEWF's ability to provide the required evidence of commitment/progress on FID and in commencement of construction of the Viking Wind Farm.

VEWF also supports CUSC modification CMP320 related to the possibility that islands may in future meet the definition of having a MITS node. We note that CMP320 currently sits with the Authority for its decision and a positive outcome is, again, a prerequisite in VEWF's ability to provide the required evidence of commitment/progress on FID and in commencement of construction of the Viking Wind Farm.

VEWF supports Ofgem's minded-to position to approve a 600MW capacity for the Shetland Transmission Link. We recognise that an 800MW capacity level has been suggested as an alternative. Given the maturity of this project, the introduction of potential delays and significant uncertainty at this stage will almost certainly impact on the utilised capacity of the link. For example; VEWF is unlikely to progress, as required by Ofgem, should the earliest in-service date be pushed to Q4 2025 or later.

Our response to the individual questions within the consultation can be found in the following pages. VEWF would like to thank Ofgem for consulting on its minded-to approve position on the Shetland transmission link Final Needs Case and Delivery Model and confirm that our consultation response is not confidential.

Yours sincerely

Question 1: What are your views on the generation scenarios developed and updated by SHE-T? We are particularly interested in views on the likelihood of wind generation on the Shetland Isles developing to the levels predicted by SHE-T's scenarios and any further changes or updates since SHE-T's October 2018 Final Needs Case submission that you think should also be considered.

- 1.1. It is VEWf's view that the generation scenarios developed by SHE-T are a fair representation of the likely position.

Contracted Projects

- 1.2. VEWf understands that there is 640MW – 730MW of capacity which is either contracted, consented or has a consenting application in process.
- 1.3. VEWf is aware of increasing interest from the offshore oil and gas industry for shore to platform connections. VEWf notes and welcomes the engagement between Ofgem and the OGA as a means to verify SHE-T's long-term demand capacity profile, associated with this interest, of up to 200MW by 2034.
- 1.4. Given the scale of Shetland's wind resource and future possibilities to establish marine technologies and floating offshore wind, VEWf agrees that a 600MW connection provides a justifiable long-term economic and efficient capacity level. VEWf notes that arguments have been made by some market participants that it may under-represent Shetland's potential. VEWf however notes that SHE-T remains firm in its position that such a change would extend the period to delivery, with potential to introduce both pre-contract and post-contract delays, resulting in an Earliest In Service Dates (EISDS) of Q4 2025. Delays such as this would likely significantly impact VEWf's ability to progress towards the achievement of significant construction milestones during 2020.

Question 2: What are your views on the demand sensitivity explored by SHE-T?

- 2.1 VEWf agrees with the demand sensitivities explored by SHE-T, and particularly welcomes the inclusion of the oil and gas demand for power from shore opportunities based on direct discussions between SHE-T and representatives from the oil and gas industry. VEWf can confirm that interest in such opportunities does appear to be increasing and accordingly looks forward to greater recognition of how these opportunities can contribute to net zero ambitions locally and nationally.
- 2.2 VEWf considers that Ofgem's minded-to view that SHET's assumed demand profile for oil and gas appears reasonable (following discussion between Ofgem and the OGA), albeit against the backdrop of uncertainty of timing and volume (exacerbated by Covid-19 and related oil and gas price volatility).

Question 3: What are your views on the link options considered by SHE-T? We are also interested in views on the options proposed by SHE-T to mitigate against the risks of a second link being needed.

- 3.1 In terms of the overall capacity of the option taken forward, VEWf believes that SHE-T's approach to bringing forward a 600MW connection is the appropriate one. A 450MW connection would be undersized against Shetland's future capacity requirements for the reasons outlined in the response to question 1 above. A requirement to redesign, retender and seek new consents for a capacity other than 600MW would have an unacceptable and prohibitive impact on EISDs.

VEWF agrees that SHE-T has considered an appropriate range of technical options. The introduction of uncertainty, and delays, to EISDs at this late hour would fundamentally undermine our ability to make the necessary project commitments which are required to secure final Ofgem approval of the Needs Case and Delivery Model.

VEWF's understanding remains that to achieve the lowest cost solution for the reinforcement, SHE-T designed the project from the outset to connect at Noss Head into the now existing HVDC cable running from Caithness (Spittal) to Moray (Blackhillock). This configuration uses advanced multi-terminal HVDC VSC technology and involves a three-way cable system, thereby avoiding the cost of an additional converter station in Scotland. The design of this reinforcement maximises the utilisation of the already constructed Caithness-Moray link hence reducing the cost to GB electricity customers.

- 3.2 The options put forward by SHE-T to mitigate the requirement for a second link appear to be appropriate and reasonable. VEWf agrees with Ofgem's minded-to position that these options should be explored further, both in seeking to maximise efficient use of the 600MW link, and in terms of helping to mitigate against the need for a second link in the future.
- 3.3 VEWf agrees that the options to: increase use of Active Network Management; offset new generation against new oil and gas demand (as verified between Ofgem and the OGA); increase use of energy storage as a means to reduce pressure on link capacity at times of high wind; and introduce more active queue management, all fit with a strategy of maximising the efficient use of a 600MW link and mitigate against the need for a second link.

Question 4: What are your views on the technical design and costs of the proposed Shetland link?

- 4.1 Please see the answers to questions 1 and 3 above.
- 4.2 VEWF welcomes Ofgem's minded-to position of being comfortable with the technical design of SHE-T's preferred connection option and how this sits against Shetland's export requirements for the foreseeable future. VEWF shares the view that backup solutions will be required to ensure long term security of supply to electricity customers in Shetland.
- 4.3 We welcome Ofgem's agreement that a derogation from Section 2 of the Security and Quality of Supply Standard (SQSS) would be required to allow the project to proceed on a single circuit basis. However, as mentioned above, VEWF supports the CUSC modification related to the possibility that islands may in future meet the definition of having a MITS node. Islands served by a single circuit radial link could, in theory, become exposed to a non-cost reflective charging regime based on a 1.8 security factor rather than application of a cost-reflective 1.0 security factor. The related modification, CMP320, currently sits with the Authority for its decision. A positive outcome is required to enable the progress necessary to provide the necessary evidence of commitment/progress on FID and in commencement of construction of the Viking Wind Farm.
- 4.3 With respect to costs of the proposed Shetland link, VEWF welcomes the significant reduction in SHE-T's capital cost estimate from c.£709m (in the October 2018 Final Needs Case submission) to the new figure of £632m. That this new estimate is informed by up to date supply chain engagement and initial tender returns is appreciated. VEWF notes that Ofgem is including relevant benchmark cost data from Caithness-Moray, to enable it to assess the right level of capital costs for the Shetland link. By the time the link enters service, the RIIO-T2 price control will be in force, and this will incorporate the benefits of a market-tested WACC and operational cost benchmarks.
- 4.4 In our previous responses, VEWF agreed with the possibility of introducing asset-specific performance metrics, and we would again be pleased to see appropriate operational performance metrics applied to the Shetland link.

Question 5: What are your views on the CBA put forward by the ESO?

- 5.1 VEFW shares Ofgem's view that the results of the ESO's CBA are mixed and inconclusive and are highly dependent on the mix of assumptions/parameters modelled.
- 5.2 VEFW notes that the application of a cost sensitivity supports a 600MW link as the most common, least worst regrets, option. The application of a LCOE approach suggests that a fully utilised 600MW link would offer better value for GB consumers than a fully utilised 450MW link.
- 5.3 VEFW would point to the information contained in Table 4 indicating EISDs of Q1 2024 for a 600MW Shetland – Caithness option and Q4 2025 for the 450MW and 800MW alternatives. Again, we agree that SHE-T has considered an appropriate range of technical options. As noted previously, the introduction of delay and uncertainty to EISDs at this late stage would fundamentally undermine our ability to provide the required evidence related to project commitments to underpin a final Ofgem approval of the Needs Case and Delivery Model. We believe that relevant factors have been appropriately considered by SHE-T and outweigh what are inconclusive CBA outcomes.

Question 6: What are your views on other approaches we have taken to assess the costs and benefits to GB customers?

- 6.1 Please see response to question 5, above.

Question 7: What are your views on our minded-to position to conditionally approve the revised Final Needs Case? Specifically:

- i) Do you agree with our proposal to approve a 600MW link subject to Ofgem being satisfied, by the end of 2020, that Viking Energy Wind Farm is likely to go ahead?**
- ii) Do you have any views on the type of evidence we should expect to see that would confirm that Viking Energy Wind Farm is likely to go ahead?**
- iii) Do you agree with the factors we have considered to reach our minded-to position?**
- iv) Are there any other factors that you consider we should take into account when assessing this proposal?**

- 7.1 Yes. VEWf fully supports Ofgem's minded-to decision to conditionally approve a 600MW link and believes that this is the most economic and efficient option. A transmission link will ensure long-term security of supply for Shetland, whilst allowing consented renewable generation to be constructed. This generation will contribute significantly towards decarbonisation, improving the geographical spread of GB's renewable energy portfolio and, providing significant post-Covid 19 economic stimulus, while at the same time providing downward pressure on the wholesale electricity market price.
- 7.2 A 600MW link provides the best balance of the available evidence regarding the merits of the different link capacities explored and offers the most likely delivery route to maximising utilisation of the link. We agree that the relevant factors have been properly explored by Ofgem in reaching its minded-to position on what is the most economic and efficient option.
- 7.3 A 600MW link provides the highest level of required investor confidence in delivery to a Q1 2024 EISD. The introduction of EISD uncertainty associated with alternative link capacities is, by contrast, likely to fundamentally undermine investor (electricity generators, oil and gas, Shetland security of supply) confidence. VEWf shares Ofgem's view that decarbonisation and the potential impact of delay are key influences on decision making beyond CBA. Furthermore, we are in strong agreement with Ofgem that mitigating the risks associated with delay outweighs any potential (inconclusive) benefits to GB customers of a 450MW link or 800MW link.
- 7.4 VEWf agrees that a 450MW link is clearly undersized against Shetland's renewable energy potential and that an 800MW link would introduce prohibitive delay. An 800MW link is likely to be significantly under-utilised given the assumed demand profile from the offshore oil and gas industry, coupled with opportunities arising from ANM, significant battery storage capacity and an effective queue management regime.
- 7.5 VEWf understands that Ofgem requires evidence that the Viking windfarm will proceed into financing and construction, before the 600MW link's final approval. VEWf is prepared to provide Ofgem the required information including by the 31st December 2020 backstop date.

Question 8: CPM relative to RIIO counterfactual - Do you agree with the findings of our analysis?

8.1 VEFW does not have any comment on this question.

Question 9: Are there any additional factors that we should consider as part of our analysis and/or decision on whether to apply the CPM for the Shetland transmission project?

- 9.1 VEFW agrees that Ofgem's assessment against the criteria for competition is technically correct in two respects, i.e. the Shetland transmission link is a new and relatively high value project. We remain unsure about its separability, given that it is the final piece in the jigsaw in a relatively complex 3-terminal HVDC system, and the first such system to be deployed in the UK.
- 9.2 VEFW has no evidence to contradict the information and analysis conducted by Ofgem, and other considerations, which result in the conclusion that departing from the existing SWW arrangements under RIIO would not be in the interests of GB consumers. VEFW's principal concern is that the transmission construction programme is maintained at the appropriate pace and the EISD of Q1 2024 is met.