

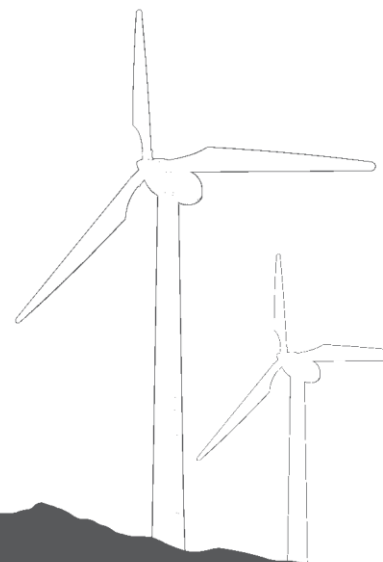


**ENERGY
ISLES** LTD

WIND FARM

Shetland transmission project: Consultation response on the final needs case and delivery model

Response from Energy Isles Limited



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Introduction

Energy Isles Limited was formed in February 2014 by eighteen local businesses with the shared belief that Shetland must maximize the benefits it derives from renewables for the greater good of the local economy and community.

The consortium, which has grown to include over fifty mainly-Shetland based businesses, has now submitted a planning application to Scottish Ministers for a twenty nine turbine wind farm sited in the north of Yell, with the potential to generate up to 200 MW of clean electricity.

Shetland is divided into seven electoral wards including the North Isles, which encompasses the remote islands in the north only accessible by ferry: Yell, Unst, Fetlar and Whalsay

The cost of living in the North Isles is 13% higher than in Shetland as a whole and 62% higher than the UK, with rates of fuel poverty at 50% across Shetland (compared to the Scottish average of 31%) and extreme fuel poverty at 22% (compared to the Scottish average of 8%).

The companies in the consortium include both large trading businesses and small family investments, and hail from a wide variety of existing sectors including crofting, farming, fishing, aquaculture, transport, renewables and support services.

Nineteen of the companies are based in or originate from the North Isles.

We note that Ofgem “particularly welcomes responses from generators and local stakeholders on Shetland.”

As a large group of local stakeholders that is 100% reliant upon an HVDC interconnector link from Shetland to the Scottish Mainland, and have invested in our community, we welcome this opportunity to respond.

Summary of Key Points

- We believe that there is now significant new information regarding the need for a more economic and efficient larger 800 / 1000 MW HVDC interconnector link.
- A larger link has benefits to all Great Britain electricity consumers as well as the Shetland islands community and economy.
- Therefore, Ofgem should ask Scottish Hydro Electric Transmission to progress the development of all three options 600, 800 and 1000 MW¹, accelerating the delivery dates.
- Ofgem should consider the results of the Government's forthcoming CfD auction, especially the contract for Viking windfarm, plus any other new information and make the final needs case decision later in 2019.
- We believe that decision should be for a larger 800 / 1000 MW link.

¹ Options 2,3 and 4 in Table 3 from Kergord, Shetland to Caithness

Question 1: Do you agree that the current network on the Shetland Isles needs reinforcing in order to connect additional generation?

Shetland is urgently requires a grid connection to mainland Scotland and to the wider European networks and electricity markets for the following reasons:

- Due to its power system and isolation, Shetland electricity generation is currently very expensive and is heavily subsidised by GB consumers.
- The diesel power station in Lerwick is old and polluting and overdue for replacement.
- The renewable energy generation potential in Shetland cannot be exploited.
- Shetland has a very high carbon footprint which could be cost effectively decarbonised with a grid connection and renewable generation.
- Shetland is not able to contribute to Scotland and the UK's decarbonisation goals.
- Existing renewable generation in Shetland is highly curtailed.
- No new renewables projects can connect to the current grid.
- Shetland has an excellent wind regime with capacity factors of >50% and which, due to its geographic separation, tends to generate when other GB windfarms are not generating.
- Shetland has potential for tidal, floating offshore as well as onshore wind generation.
- Due to a lack of grid, stakeholders in Shetland have not been able to participate fully in previous renewable energy support schemes such the Renewables Obligation.
- It would facilitate further connection to Norway providing a secure supply on Shetland. Obviating the need for standby generation when the one HVDC link is inoperable. Connection to Norway is supported in the Scottish Government Networks Vision for 2030.

Question 2: What are your views on the generation scenarios developed by SHE-T? We are particularly interested in view on the likelihood of wind generation on Shetland developing to the levels predicted by SHE-Ts scenarios.

SHE-T's scenarios are unrealistically low. In particular:

- SHE-T 's scenarios should also include other technologies such as tidal, floating offshore wind demonstrators and future interconnection to Norway.
- Their largest scenario is 742 MW². In addition to Viking's potential 457 MW; there is 49 MW and 72 MW with planning for Mossy Hill and Beaw Field; 200 MW planning application submitted for Energy Isles on Yell; 10 MW of other projects with planning and 12 MW operating. This totals to 801 MW.

² Scenario GHD-S4

- We believe that 801MW of wind will be operating in Shetland in 2025 and renewable generation capacity will grow after that.
- With a modest annual growth rate of 2.4%, 801 MW in 2025 will reach 1000 MW by 2035.
- In Ofgem's assessment of the Caithness Moray link the Ofgem generation growth projection was 7% per annum³.
- Renewable energy generation in the UK has grown from ~25 TWh to 112 TWh between 2009 and 2018⁴ - an annual growth rate of 18% - Shetland has been excluded from this opportunity and is looking to catch up with the rest of the UK on renewable generation.
- The Scenarios do not consider the Net-Zero report⁵ which projects a doubling of UK electricity demand and a four-fold increase in low carbon generation by 2050; specifically, the potential for UK onshore wind is stated to be 26-96GW by 2050, we want the opportunity in Shetland to benefit from this expansion.
- The Scenarios do not consider the Scottish Government's commitment⁶ to net-zero by 2045 which will see Scotland becoming carbon neutral by 2040.
- The Scenarios do not consider the recent BEIS Energy and Emissions Report⁷ in April 2019 which shows the UK is off target to meet 4th and 5th carbon budgets with an increased gap since 2017.

Question 3: What are your views on SHE-T's approach to optioneering, are there other options that SHE-T should have considered?

Ofgem has noted that SHE-T "has prioritized the development of its proposed 600 MW option and not developed other options to the same extent"⁸. In our view there are significant consumer benefits that arise from building a larger link i.e.

- An 800 MW link costs 6% more than 600 MW yet delivers 33% more capacity, which is 26% more cost effective than 600 MW.
- An 1000MW link costs 12% more than 600 MW yet delivers 66% more capacity, which is 48% more cost effective than 600 MW.

This increase in cost efficiency and value for money is reflected in lower Transmission Use of System Charges. These lower charges will ensure that generation in Shetland is more competitive and therefore the larger the link, the more likely it is to be filled quickly by economic renewable generation comprising onshore wind, tidal, and/or demonstration floating offshore technologies.

Energy Isles does not accept that delivering these larger links will take until Q4 2025 as is claimed by SHE-T.

³ DNV KEMA report for Caithness Moray 18 March 2014 Figure 7- 2400 MW to 4700 MW in ten years.

⁴ <https://s3.eu-west-2.amazonaws.com/cbhighcharts2019/uk-power-2018/UK-annual-generation-2009-2018-alt.html>

⁵ <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

⁶ <https://www.bbc.co.uk/news/uk-scotland-48123960>

⁷

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794590/updated-energy-and-emissions-projections-2018.pdf

⁸ Para 2.25

We request that Ofgem immediately instructs SHE-T to restart developing the 800 and 1000 MW options with the supply chain.

Energy Isles has been informed that SHE-T are proposing to build another 600 MW HVDC link to deliver the increased capacity for Energy Isles⁹. This additional link option is not considered or compared in the needs case, especially considering the cost benefit of 2x600 MW links vs a 1000 MW link¹⁰. Therefore, the needs case needs to be updated and re-submitted to include the proposed connection for Energy Isles 200 MW project.

We are additionally greatly concerned that Ofgem has flagged an expectation that transmission charges could in future apply to distributed generation, which would severely impact existing generators in Shetland.

It is therefore imperative that the most cost-effective link is built to minimize these charges should they occur.

Question 4: What are your views on the CBA put forward by the ESO?

The consultation states “the original CBA is clear that... building a link to connect the project to the mainland will be in the interests of consumers”¹¹. Energy Isles notes that a fully utilised 1000 MW link will be 48% more cost effective than a 600 MW link and that this improved cost efficiency should be considered.

With regard to the CBA, the GHD report states that “the larger the capacity of the transmission option, the greater the amount of generation enabled and resulting economic benefits during wind farm construction and operation as well as the establishment of further community funds directly related to the successful operation of renewable projects which directly benefit island residents and communities”.

Using GHD figures Energy Isles calculates that the increased benefit to the Shetland economy from fully utilized HVDC links for 800 MW as £64m and for 1000 MW as £133m on top of the benefits of £143m to £257m for the 600 MW option.

Shetland therefore has a very significant interest in the decision and stakeholders in Shetland should have a say to ensure the economic potential in Shetland is considered in this decision.

Considering the ESO LWR analysis Energy Isles notes that:

- The highest generation scenario is only 742 MW. Vis-à-vis our response to Q2 above, this is grossly inadequate as the highest future 2035 scenario and therefore the LWR is not effective, realistic or appropriate. Ofgem should instruct the ESO to rerun the LWR with a wider range of scenarios.
- In order to make the 600 MW option more cost effective than the 800 MW option, the ESO has included constraint costs for the wind over an 18month period. We are not aware of any situation where GB windfarms have been paid for constrained generation whilst

⁹ Meeting with NGESO and SHE-T 8th May 2019 regarding 80MW additional capacity application for Energy Isles made in March 2019.

¹⁰ 2x£709m for 2x600MW links = £1418m vs £797m for a 1000MW link

¹¹ Para 2.30

waiting their grid connection. Therefore, this is a spurious scenario which should never have been modelled or included in the consultation.

- There is no scenario showing the LWR with 800 MW and 1000 MW options delivered as scheduled but with no wind constraints. This omission should be rectified, and these scenarios provided.
- When the 800 MW link is delivered at the same time as the 600 MW link, then it is the most cost effective in LWR.
- Ofgem should instruct the ESO to run scenarios with a range of future generation scenarios as per our Q2 response and with 800 MW and 1000 MW options, and without adding in constraint costs for generation before the link is built.

We will be able to comment effectively and fully on the LWR analysis when these changes are made and the results presented.

Question 5: What are your views on the technical design and costs of the proposed Shetland link?

The consultation states that Ofgem's cost benchmarking indicates that the capex should be in the range £368m-£395m vs the SHE-T cost of £709m-£797m. The unit cost for 600 MW using Ofgem data is £658k/MW and the unit cost for SHE-T 1000 MW is £797k/MW.

To ensure that Shetland is not disadvantaged against offshore transmission and offshore windfarms competing in the CfD auction, Ofgem should ensure that the link is built cost effectively by either sizing, benchmarking or competition.

Higher capital costs will create higher transmission charges and make Energy Isles windfarm a less competitive project, putting its viability and delivery at risk.

To minimise this risk, Ofgem should ensure that a larger link is built, ensuring that the final design is the most cost effective.

Question 6: What are your views on our minded-to position to conditionally approve the Needs Case? Specifically, do you agree with our proposal to approve a 600 MW link if Viking Energy Wind Farm secures a CfD in 2019?

No, we do not agree.

Shetland needs a new transmission link which is appropriately sized, economic and efficient.

Ofgem should "send-back" the needs case and insist that SHE-T develop the 800 MW and 1000 MW options so that a decision can be made in Q4 2019 on the most appropriate link size once the CfD results are known and with other information coming forward.

For comparison, regarding the Orkney link, SHE-T have advocated that 70MW of contracted generation is sufficient to secure a 220MW link, i.e. with 32% of the capacity. Applying the same SHE-T proportions to Shetland would mean that for a Viking windfarm of 412MW or more, SHE-T should propose a 1000MW link as this would secure 41% of the capacity, (still far in excess of what SHE-T is proposing for Orkney). In their approach therefore, SHE-T have unduly discriminated against potential generators on Shetland compared to those on Orkney.

Ofgem stated they would approve the Orkney 220MW link if 135MW of generation was contracted – this is 61% of the capacity. For a 800MW link, 61% of capacity equals 491MW of generation. So, if for example Viking and either Beaw field or Mossy Hill (both of which have planning and therefore are eligible for CfD in 2019) were to gain contracts in the CfD, the 800MW threshold would be achieved. This calculation strongly supports our position that Ofgem should require SHE-T to develop all three options (600, 800 and 1000MW) and Ofgem should make the final decision in Q4 2019 when CfD results are known and when other relevant information and government policy updates are expected to be available.

In Ofgem's decision on the Shetland New Energy Solution¹² it was stated that Ofgem's decision "enables potential further savings to consumers from a joined-up solution". **We expect Ofgem to deliver such savings in a larger transmission link.**

Question 7

No response.

Question 8: Do you agree with our proposal not to competitively tender the Shetland project using the SPV model or under our CATO framework unless there are significant delays to the delivery timelines?

If this link were put out to competition, the lowest unit cost option and therefore the most cost efficient for future consumers would clearly be the 1000 MW option, given that the unit cost is £797k/MW, far more cost effective than the 600 MW option at £1,182/MW. As the lowest unit cost option, we would expect the larger link to win any competition.

If SHE-T are to build the link, they should be subject to the same competition drivers, and should develop and build the most cost-effective link for the benefit of GB consumers and Shetland stakeholders alike.

Questions 9 & 10

No response.

End Note

Thank you for the opportunity to submit to this consultation.

In conclusion, we believe Ofgem should ask SHE-T to progress the development of all three options, accelerating the delivery dates. We think that Ofgem should consider the results of the forthcoming CfD auction plus any other new information, and make the final needs case decision later in 2019. And we believe that when a decision is made, it should be taken for a larger link.

We invite Ofgem to visit Shetland, as Alistair Buchanan did with regards to the 60 MW link, to hear directly from the community, shareholders and stakeholders the implications of Ofgem's decision coming out of this consultation. Ofgem's decision in this case is a larger and more important investment, and thus we believe that a visit is even more warranted in this case.

Yours sincerely

¹² 30 November 2017.

Angus Ward
Chair
Energy Isles Limited