

Nordri Ltd

Staney Hill Industrial Estate
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29th May 2019

Dear Mr James Norman,

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

I note that Ofgem “particularly welcomes responses from generators and local stakeholders on Shetland”. I represent a Shetland business which operates in the renewable energy sector – predominantly wind and solar, and also a stakeholder in Energy Isles. The company has established itself on Shetland as the largest micro scale renewable energy provider, now employing seven staff.

As a renewable energy business our largest challenge has always been the lack on grid capacity on Shetland. This constraint has been restrictive to our business which is a frustration, but to many of our prospective customers the grid constraint had completely ruled out the possibility installing renewable energy, which is unacceptable situation which needs to be addressed.

Our business is being forced to diversify away from renewable energy, at a time where government policy and other worldwide organisations are enforcing it. With Shetland in line to be connected to the mainland UK distribution network, it is essential that there is capacity on the interconnector to allow the general public and small enterprises to embrace the renewable industry.

Summary

I believe there is now significant new information regarding the need for a more economic and efficient larger 800/1000MW link. A large 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 1000MW¹, 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

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

information and make the final needs case decision later in 2019. We believe that decision should be for a larger 800/1000MW link.

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

Shetland is in dire need of a grid connection to mainland Scotland and to the wider European networks and electricity markets for the following reasons:

- As a renewable installer, we turn away renewable energy projects almost weekly due current restrictions on the grid. Reinforcing is urgently required to address this and minimise further suppression on the industry.
- To allow small scale generators establish themselves on Shetland without an unfair restriction which has applied to date.
- To promote research and development on alternative renewables in Shetland, unlocking a whole new industry.
- To combat Shetland carbon foot – which is amongst the highest of the UK.

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:

- As noted above, we, as a wind and solar installer are turning projects away daily due to the lack on connection to the grid.
- The projects which we see get quashed is done so before any formal application is made, therefore I believe they are invisible to the SHE-Ts scenarios.
- The Scenarios do not consider the Scottish Government's commitment² to net-zero by 2045 which will see Scotland becoming carbon neutral by 2040.
- We are aware of plans to develop multiple projects typically solar which will likely go ahead when the interconnector is in place. This will only be possible if capacity allows.

² <https://www.bbc.co.uk/news/uk-scotland-48123960>

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

Ofgem have noted that SHE-T "has prioritised the development of its proposed 600MW option and not developed other options to the same extent"³. In our view there are significant consumer benefits that arise from building a larger link i.e.

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

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 do not accept that delivering these larger links will take until Q4 2025 as is claimed by SHE-T. We request that Ofgem immediately instructs SHE-T to restart developing the 800 and 1000MW options with the supply chain.

Energy Isles has been informed that SHE-T are proposing to build another 600MW HVDC link to deliver the increased capacity for Energy Isles⁴. This additional link option is not considered or compared in the needs case, especially considering the cost benefit of 2x600MW links vs a 1000MW link⁵. Therefore, the needs case needs to be updated and re-submitted to include the proposed connection for Energy Isles 200MW 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 minimise 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"⁶. Energy Isles notes that a fully utilised 1000MW link will be 48% more cost effective than a 600MW link and that this 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

³ Para 2.25

⁴ Meeting with NGESO and SHE-T 8th May 2019 regarding 80MW additional capacity application for Energy Isles made in March 2019.

⁵ 2x£709m for 2x600MW links = £1418m vs £797m for a 1000MW link

⁶ Para 2.30

communities". Using GHD figures Energy Isles calculates that the increased benefit to the Shetland economy from fully utilised HVDC links for 800MW as £64m and for 1000MW as £133m on top of the benefits of £143m to £257m for the 600MW 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 742MW. 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 600MW option more cost effective than the 800MW 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 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 800MW and 1000MW options delivered as scheduled but with no wind constraints. This omission should be rectified, and these scenarios provided.
- When the 800MW link is delivered at the same time as the 600MW 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 800MW and 1000MW 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 600MW using Ofgem data is £658k/MW and the unit cost for SHE-T 1000MW 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 600MW 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 800MW and 1000MW 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.

In Ofgem's decision on the Shetland New Energy Solution⁷ 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 8: Do you agree with our propose not to competitively tender the Shetland project using the SPV mode 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 1000MW option, given that the unit cost is £797k/MW, far more cost effective than the 600MW option at £1,182/MW. 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 7,9,10 – no response.

Yours sincerely,



Brian Halcrow BEng (Hons) MIET
Managing Director