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18 June 2020

Dear Mr Norman

Consultation – Shetland Needs Case

Thank you for the opportunity to respond to the above consultation.

Highlands & Islands Enterprise (HIE) along with its local partners - the democratically elected local authorities covering the north of Scotland and the islands; Shetland Islands Council, Orkney Islands Council, Comhairle nan Eilean Siar, The Highland Council and Argyll & Bute Council – for many years have sought to influence grid regulatory matters to ensure the interests of our region are taken into account. HIE and its partners also work closely with Scottish Government in relation to grid regulation and investment.

The Highlands and the Islands off the north and west coast of Scotland represent a large geographical region. The region has a low population density with many pockets of population spread across areas that are often remote. The region is home to a large volume of renewable energy generation – from small scale, community developments to very large commercial installations – and has significant opportunity to further develop its renewable resource. The importance of securing investment in island interconnection to enable the renewables resource there to be developed cannot be underestimated from an economic and community sustainability perspective. Supporting the case for that investment has therefore been a key priority for HIE and its partners for over a decade.

We are delighted that the current consultation has finally been brought forward – it has been a long and arduous path for both SSEN and island developers to reach this stage. The very fact developers have continued to progress projects despite the considerable and prolonged uncertainty over interconnection and associated charging is a testament to their significant and ongoing commitment. With the fundamental drive towards a net zero future, and current economic recovery imperative as a result of COVID-19, the need for a positive outcome to this consultation is all the more important.

We hope that this week's announcement that the Viking Energy Wind Farm has reached FID will allow an early and positive decision to be made.

Our detailed response to the consultation is set out in the attached. We look forward to hearing the results at the earliest opportunity.

Yours sincerely

In partnership with: -
Shetland Islands Council
Orkney Islands Council
Comhairle nan Eilean Siar
The Highland Council
Argyll & Bute Council

- 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.**

The demand for carbon-free electricity is encompassed in UK and Scotland's Climate Change legislation, specifically the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009, and is driving the need for additional renewable energy to meet a target of reducing greenhouse gas emissions by at least 80% by 2050 [1]. HIE note that developing links to islands is one of the Scottish Government's key concerns and its vision for Electricity Networks by 2030 is to have substantially invested in new capacity for Scotland's electricity networks, including transmission links to island groups [2].

At present, Shetland has a very high carbon footprint which could be cost effectively decarbonised with an appropriate grid connection and renewable generation. Shetland is not able to contribute to Scotland and the UK's decarbonisation goals, and existing renewable generation is highly curtailed with no new renewables projects able to connect to the current grid under present arrangements.

As the economy recovers from Covid-19, it is imperative more than ever to unlock Shetland's potential to supply low-cost renewable electricity to consumers in order to ensure that 'no one is left behind', as well as provide direct stimulus towards measures that reduce greenhouse gas emissions, generate jobs and repair the economy. To illustrate, at a local level, Viking Energy Wind Farm (VEWF) alone will provide an annual return to Shetland Charitable Trust on its historic investment, £2.2m a year in direct community benefit payments, provide employment including an average of 140 construction jobs, and power up to 335,000 homes [3]. Shetland has considerable potential to unlock hundreds of millions of pounds of private investment, contributing to the green recovery, through development of the 600MW Shetland transmission link, which in turn enables investments in 'known' projects on the islands, being Viking Energy Wind Farm (457MW and which has achieved now FID); Beaw Field (~58MW); Mossy Hill (50MW) – all consented- and Energy Isles (~120MW) which is in planning.

SHE-T's generation scenarios assume that between 459MW and 818MW of wind generation may connect on Shetland by 2032. HIE considers GHD Scenario 1 (459MW) and GHD Scenario 2 (640MW) is under representative, on the basis that contracted transmission-connected generation amounts to 685MW, with a potential 'known' distribution-connected potential at 38.8MW.

We are therefore supportive of the higher generation scenarios. We are also of the view that further generation will come forward as certainty on TNUoS charges is achieved and risks associated with the high level of securities and liabilities (set out under CMP192 User Commitment methodology [4]) are removed with the decision to progress the link.

As part of the analysis, Ofgem has considered the upcoming CfD auction for 2021, and while realising that generators are looking at other routes to market, Ofgem states that the economic feasibility of projects without a CfD is uncertain. We are of the view that the proposed changes to the CfD with the separation of fixed offshore wind could potentially

improve the competitiveness of island wind. Notwithstanding that however, we do not believe that the outcome of the upcoming CfD auction is likely to have a significant bearing on the eventual development of new generation capacity on Shetland. Many of these projects may not bid into the auction. Reasons for not bidding include the expense of doing so alongside the strength of competition. Therefore, we believe that even without the allocation of a subsidy from the CfD round in 2021, it is still possible for projects to progress.

It is also important to note the current Connection and Use of System Code (CUSC) modifications that are currently in place, which aim to compress the network as much as possible with regards to TNUoS charges, in order to remove distortions in the charging methodology for projects in the north of Scotland, and in particular, for the Islands:

- CMP303 'HVDC wider benefits' has the potential to 'shrink' the transmission system for island connections and reduces the competitive disadvantage associated with generation connections for Islands, in comparison to its mainland counterparts. CMP303 aims to reduce the local circuit charges for island generators by removing any additional costs not directly associated with generators.
- CMP320 'Islands MITS Radial Link Security Factor' promotes competition and increases cost reflectivity in that it addresses what would be the over-charging of island links under current methodology if a Main Interconnected Transmission System (MITS) node were to be created on the island. It challenges the status quo which has the propensity to massively distort competition between island generators and other generators.

Furthermore, Ofgem's approval of 'Scottish Hydro Electric Power Distribution's proposals to contribute towards proposed electricity transmission links to Shetland, Western Isles and Orkney', is dependent on the Final Needs Case. For Shetland, the interconnector, whether it be transmission or providing distribution benefits, needs to be in place to facilitate renewable generation export, energy security and to deliver significant reductions in the current high-carbon intensity of the electricity supply given that the Lerwick Power Station is diesel-fuelled. There is demonstrably a considerable benefit to demand consumers if implemented.

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

In addition to the updated wind farm development on Shetland is the impact of potentially significant electricity demand resulting from powering offshore oil and gas projects with Shetland renewables. Increased demand from oil and gas infrastructure provides a robust case for the 600MW link and helps mitigate any potential future requirement for a second link. Off Shetland are key areas for exploration and development, and therefore, significant new demand is likely. It is notable that Ofgem has confirmed SHET's projections with the OGA.

With the advent of Net Zero, the oil industry is committed to decarbonising its operations by 2050 and this means a transition to decarbonised electricity supply to both terminals and production platforms. Therefore, the transmission link is valuable to the Oil and Gas sector

and provides an opportunity to integrate the Oil and Gas and renewables industries in and around Shetland.

While we are supportive of the demand sensitivity explored by SHE-T, we are mindful that demand forecasts are subject to many future uncertainties, and that further sensitivities should be considered. For example:

- **Increased demand from new renewable generation when not operating.** Whilst new renewable capacity on Shetland will make a major input to supply, there will be times when it is not generating but needing to consume energy. We estimate that the currently planned series of wind farms, when built, may require up to 20-25MW of demand which could add to peak requirements.
- **Electrification of heat and transport.** While we acknowledge that future demand patterns are not always easy to predict, there are potentially significant changes to demand patterns in the near and longer term that are relevant to electricity supply and demand on Shetland. It is widely expected that the transport sector will see a major change in its use of energy and electric vehicles are expected to see a rapid and significant uptake. Other grid network planners are already considering such changes, and this should be considered for Shetland.

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.

In terms of 'right sizing' and 'timing', HIE believes that a 600MW capacity link is the best option to realise the potential of renewable energy from the Shetland Isles.

Sizing

Due to the intermittency of wind, there is the possibility that more than 600MW of generation will be able to use the link. This increases the utilisation of the link and improves its economics.

The generation scenarios point to 640MW-730MW of onshore wind, and the Oil and Gas Authority (OGA) has confirmed up to 200MW of new industrial demand in Shetland by 2034. The 600MW cable would accommodate planned wind generation and allow for future development which would be partly offset by the new industrial demand, thus making 600MW the optimal choice. We are of the view that the OGA forecast is credible, and, based on HIE's discussions with the sector, we strongly agree with the demand sensitivity set out in the consultation.

Timing

Anything other than the 600MW option would add two years onto the process. HIE support the 600MW link because this option is capable of being delivered within the parameters of the current planning consents for the link and major generation projects. This includes 457MW VEF and Peel Energy's 58MW project for South Yell, which are expected to be grid connected by Q1 2024.

The economic principle that ‘a job today is worth more than a job tomorrow’ applies, as does the earlier contribution to a decarbonised UK electricity system afforded by an earlier construction. In addition, the interconnector will facilitate low carbon operation of existing and new Oil and Gas developments which will help accelerate the energy transition, decarbonise Oil and Gas production and aligns completely with net zero targets.

Overall, HIE believe that a 600MW link will provide the most beneficial outcome for consumers. Considering the scale of VEWf’s project and that it is already consented and achieved FID, this provides protection for consumers as it decreases the risk of paying for a link that is bigger than necessary. Subsequently, once the link is in place, this will act as a strong financial incentive and development catalyst for other developers to progress to full operation.

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

No comment.

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

We believe that the CBA put forward by the ESO is reasonable and balanced.

To the extent any delay costs associated with extra build for a larger 800MW link may be included, there would need to be substantially more conclusive evidence to validate an 800MW link. Ultimately, we believe that it is more advantageous to provide the earliest delivery option.

6. What are your views on other approaches we have taken to assess the costs and benefits to GB consumers?

HIE agrees with the Levelised Cost of Energy (LCOE) analysis, which suggests that a fully utilised 600MW or 800MW link would offer better value for consumers. Ultimately, the transmission link will provide good value for consumers if it is fully utilised. As we have previously stated (Q2 and Q3), we believe that a 600MW capacity link is the best option. HIE also notes the potentially unworkable “Earliest in Service Dates” associated with alternative capacities to 600MW.

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?**

Yes, HIE strongly agrees with the proposal. HIE believes that a 600MW transmission link will be appropriately utilised, considering that the approved wind farms, VEWf, and Peel Energy wind farms at Beaw Field and Mossy Hill, as well as the planned Energy Isles wind farm in Yell, hinge on provision of the 600MW link.

As Viking Energy states, 'Conditional approval of the Shetland needs case would provide the necessary signal for Viking Energy Wind Farm to progress towards a Final Investment Decision (FID)' [3]. Furthermore, SHEPD's proposed contribution towards the new transmission link for Shetland has been approved by Ofgem (albeit interdependent on the transmission link) and is a further critical signal to Viking Energy. As noted earlier, VEWf has now achieved FID marking a significant milestone for that project and one which should provide confidence to proceed with the transmission link.

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?

We note that Ofgem intend to discuss with VEWf what evidence it might be able to provide to its satisfaction within a reasonable timescale, and Ofgem wants to ensure that there will not be any significant delays to VEWf. The fact that VEWf has achieved FID should alleviate any remaining concerns in this regard. We also note that the Enabling Works on the project have already begun to ensure that it can proceed without delay. In terms of other recent developments for the project, VEWf has received planning permission from the Shetland Islands Council on 27 May 2020 to build a new access road [3].

iii. Do you agree with the factors we have considered to reach our minded-to position?

Yes, HIE agrees with the following factors.

Security of supply

A transmission link from Shetland to the mainland is likely to be needed before 2030 in order to ensure long-term security of supply. There is an imminent energy supply challenge with the Lerwick Power Station, which is responsible for most of Shetland's supply, now reaching the end of its operational life. Further to Ofgem's decision to reject the Shetland New Energy Solution in 2018, there is an urgent need to ensure future energy security on Shetland in an economically efficient way. We therefore believe that the Shetland Needs Case represents a robust case to provide the best possible opportunity to facilitate the development of more sustainable forms of energy generation, as well as securing security of supply on Shetland.

Size of transmission link

As set out in Q3, HIE considers the 600MW link as the most appropriate option which aligns with Ofgem's analysis.

Decarbonisation considerations

In short, the proposed electricity transmission link will allow new wind farms on Shetland to export renewable electricity to the rest of the UK, as well as bolster electricity supply on the Shetland Islands. Although an 800MW link would provide headroom for future generation beyond the 'known' projects, we believe that there are too many challenges associated with the 800MW link, not least protracted delay and resultant investor uncertainty. The 600MW link is crucial to the development of approved projects and is the most economically viable option considering the real possibility of up to 200MW of demand coming from the oil and gas fields to the west of Shetland, such as Clair.

iv. Are there any other factors that you consider we should take into account when assessing this proposal?

Ultimately, Shetland needs a link which is appropriately sized, economic and efficient. In addition to the analysis provided in the consultation, HIE notes:

- As part of the potential 'Green Recovery', it is imperative to push for an earlier delivery option.
- Potential further work on demand sensitivities including the uptake of electric vehicles and electrification of heat would be helpful.
- Ofgem should take into account current CUSC modifications which would be beneficial to Shetland (and other islands') projects, such as CMP303, CMP320, CMP 337 and CMP 338.

Delivery model

8. Do you agree with the findings of our analysis?

We are supportive of proposals that will bring down the costs (particularly in the later years of the asset lifetime) for electricity consumers. We understand the benefits of having the Competition Proxy Model (CPM) due to locking in current rates and having a revenue term of 25 years which is appropriate considering the significant savings for consumers in the later years of the asset lifetime. However, as per previous consultation responses, we continue to have concerns with the CPM as follows:

- CPM is disjointed in that TNUoS is separate to the CPM and therefore, it is not clear how any future investments are being accounted for in the proposed shorter life span of the transmission asset.
- There is a lack of clarity in the CPM.
- There are risks associated with using the CPM on the Islands without any previous implementation.
- HIE previously expressed concerns that the CPM has not been fully developed by the regulator and in comparison, the SWW delivery arrangements is well-established.

Moreover, HIE previously voiced concerns that there would be many costs and risks associated with the CPM model because they represent a movement away from the status quo, and thereby incorporate implementation costs and risks.

In addition, the inevitable delays that are associated with new high value projects are not considered and therefore, under the CPM model, both the transmission owner (TO) and affected generators could be subject to considerable unforeseen costs.

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?

We can also provide potential ideas for improvement of the CPM methodology. For example, under the CPM model, Ofgem would set revenue terms intended to reflect the outcome of an efficient competitive process for financing, construction and operation of the

project. That said, HIE believes that Ofgem should have relevant benchmark cost data to enable it to assess the right level of capital costs for the Shetland link (for example, data from the Caithness-Moray link) and should carefully consider relatively unique aspects of delivering such infrastructure in the north of Scotland.

References

- [1] UK Government , “Climate Change Act 2008”, June 2008.
- [2] Scottish Government, “Scotland's electricity and gas networks: vision to 2030”, 12 March 2019.
- [3] Viking Energy, “The Project”, 04 06 2020. [Online]. Available: <https://www.vikingenergy.co.uk/the-project>.
- [4] National Grid Electricity System Operator, “CUSC Section 15 (CMP192)”, February 2013.