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Shetland Energy Isles

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

It is noted that Ofgem “particularly welcomes responses from generators and local stakeholders on Shetland”. Statkraft is developing the Energy Isles windfarm in Yell, Shetland in association with over 50 local investor shareholders¹. The project has “secured” 120.3MW of transmission connection capacity on 13.09.2018 and applied for an additional 80MW capacity with an offer due on 04.07.2019. The additional capacity was the result of the detailed site design, environmental assessments, stakeholder consultations, turbine specification and delivery/access assessments and is in line with the planning application submitted 13.05.2019.

Summary

Statkraft notes that in November 2017, Ofgem rejected the proposal for an HVDC distribution connection to connect Shetland (the NGSSL-Aggreko solution) to enable “potential further savings to consumers from a joined-up solution, should a transmission link be needed”. Statkraft agrees with this Ofgem consultation that a transmission link is needed. However, the 600MW link size was originally specified in 2007 and there is now significant new information regarding the need for a more economic and efficient larger 800/1000MW 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 (SHE-T) to progress the development of all three options 600, 800 and 1000MW², accelerating the delivery dates. In Q4 2019, Ofgem should consider the results of the Government’s forthcoming CfD auction, especially the contract for Viking windfarm and other windfarms which may tender or secure contracts, plus any other new information, including Scottish and UK government policies on climate policy, and make the final needs case decision at that point. In Statkraft’s view it is already clear that the decision should be for a larger 800/1000MW link, and Statkraft believes that the evidence available in Q4 2019 will put this beyond any doubt.

¹ <https://www.energyisles.co.uk/who>

² Table 3 Options 2, 3 and 4; Shetland to Caithness

In considering a larger link Ofgem would be following its Corporate Strategy as a larger link will “provide lower bills than would otherwise be the case” – due to lower unit costs and “reduce the environmental damage” by enabling more decarbonised generation to be delivered through the Shetland connection.

This is the first consultation on the Shetland connection. Ofgem’s Strategic Wider Works (SWW) process includes initial and final needs cases with consultations, yet for Shetland this has not been the case. Statkraft fail to see why these circumstances would preclude an Initial Needs Case or a similar consultation. In Statkraft’s view this consultation should serve as the Initial Needs Case consultation; the Final Needs Case consultation should come after the CfD Auctions results later in 2019; followed by the Project Assessment consultation.

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

In Ofgem’s decision on the NINES³ Ofgem stated that if a transmission solution was needed it would “enable potential further savings to consumers from a joined-up solution” with “the additional benefit of waiting until the outcome of the CfD auction is known”. Ofgem has therefore already agreed that the network on Shetland needs reinforcing, and that a transmission reinforcement as part of a joined-up solution can save money for consumers.

Shetland needs a transmission 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 significant potential renewable energy generation in Shetland cannot be exploited as is.
- Shetland has a very high carbon footprint in relative terms which could be cost effectively decarbonised with a transmission 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 are permitted to connect to the current grid.
- Shetland has an excellent wind regime with capacity factors in excess of 50% and which, due to its geographic separation, tends to generate more when other GB windfarms are generating less.
- Shetland has potential for tidal, floating offshore as well as onshore wind generation.
- Due to a lack of grid, stakeholders in Shetland have been excluded from any significant participation in previous renewable energy support schemes including the Scottish Renewables Order, the Renewables Obligation and the CfD.
- A transmission connection to Scotland would facilitate future further interconnection to Norway providing a secure supply in Shetland. Such interconnection would reduce transmission bottlenecks in Scotland by exporting during high wind conditions. Connection

³ https://www.ofgem.gov.uk/system/files/docs/2017/11/shetland_new_energy_solution_decision_-_final_0.pdf

from Shetland 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 future generation scenarios are exceptionally low. In particular:

- At least some of SHE-T's scenarios should also include other technologies such as tidal, floating offshore wind demonstrators and future interconnection to Norway.
- SHE-T's largest scenario is 742MW⁴. As listed in Appendix 1, identifiable wind and tidal generation projects on Shetland which: are either in operation; have planning permission; or are in planning; exceeds 800MW. This total does not allow for future expansion and development in between the realisation of these identified projects circa 2025 and 2035, the end of the needs case window, let alone further expansion over the 40 year or more lifetime of the HVDC link.
- The SHE-T scenarios based on the 2017 FES⁵ should be updated to the FES 2018 which was produced in July 2018 with updates published on 7th Feb 2019; the FES changes noted include "greater renewables uptake can be seen across all scenarios as compared to FES 2017, to reflect falling costs and political ambition".
- It is Statkraft's expectation (subject to transmission capacity) that at least 650MW of wind generation will be operating in Shetland in 2025/26 and that renewable generation capacity will grow after that. Even with only a modest annual growth rate of 4.4%, 650MW in 2025 will grow to 1000MW by 2035. And this growth rate is considerably lower than that used by Ofgem in assessment of the Caithness Moray link where the Ofgem generation growth projection was 7% per annum⁶; and is even lower again than the UK renewable energy generation historical growth rate of 18% per annum (~25TWh to 112TWh between 2009 and 2018)⁷. Shetland has been excluded from the opportunity to grow and develop renewable energy resources and an appropriate transmission connection is needed for Shetland catch up with the rest of the UK on renewable generation. Even on the most conservative projections a reasonable growth rate over the next 10-15 years should be modelled.
- The Scenarios do not consider the Net-Zero report⁸ which was requested by the UK, Scottish and Welsh governments, 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.
- The Scenarios do not consider the Vivid-Imperial report in April 2019⁹ which states that "significant new renewable generation capacity is needed to accommodate rapid uptake of electric vehicles and hybrid heat pumps. Over the period to 2035 up to 35GW onshore wind...could be needed".

⁴ Scenario GHD-S4

⁵ National Grid Future Energy Scenarios.

⁶ DNV KEMA report for Caithness Moray 18 March 2014 Figure 7- 2400MW to 4700MW in ten years.

⁷ <https://s3.eu-west-2.amazonaws.com/cbhighcharts2019/uk-power-2018/UK-annual-generation-2009-2018-alt.html>

⁸ <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

⁹ <https://www.theccc.org.uk/wp-content/uploads/2019/05/Accelerated-Electrification-and-the-GB-Electricity-System.pdf>

- The Scenarios do not consider the Scottish Government's commitment¹⁰ 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 Report¹¹ in April 2019 which shows the UK is off target to meet 4th and 5th carbon budgets with an increased gap since 2017.
- Ofgem's 2018 State of the Market report¹² notes that the UK "is not on course to meet its legally binding carbon budgets from 2023... Meeting the challenge of future carbon targets is likely to require additional policy interventions, including to stimulate further decarbonisation of heat and electricity"; as Shetland generation will contribute to those post 2023 carbon budgets, the scenarios should reflect these needs and opportunities, which they currently do not.

In conclusion to Question 2, the scenarios are inadequate and are not appropriate for the CBA and LWR analyses carried out, Ofgem should therefore send back the needs case and ask SHE-T to update the scenarios according to the new information provided above.

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

SHE-T has considered enough options, except for one option that they are actively developing that is not taken into account in this consultation and should clearly have been.

However, in any event Statkraft does not agree with the way that the options have been assessed.

2x 600MW links

Statkraft has been informed that SHE-T are proposing to build another 600MW HVDC link to deliver the increased capacity for Energy Isles¹³. This additional link option is not considered or compared in the needs case, especially considering the cost benefit of 2x600MW links vs a 1000MW link¹⁴. Therefore, the needs case needs to be updated and re-submitted to include the proposed 2x 600MW connection for Energy Isles 200MW project.

In the NINES decision¹⁵ Ofgem stated that it was not approving the 60MW distribution link as if a transmission link subsequently came forward "then this outcome may not, with hindsight, offer the optimal cost solution for Shetland and consumers in the long run". SHE-T are developing a similar situation (without informing Ofgem) by proposing two 600MW links, when a larger link could be provided instead at much lower cost.

¹⁰ <https://www.bbc.co.uk/news/uk-scotland-48123960>

¹¹

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

¹² https://www.ofgem.gov.uk/system/files/docs/2018/10/state_of_the_energy_market_report_2018.pdf

¹³ Meeting with NGEESO and SHE-T 8th May 2019 regarding 80MW additional capacity application for Energy Isles made in March 2019.

¹⁴ 2x£709m for 2x600MW links = £1418m vs £797m for a 1000MW link

¹⁵ https://www.ofgem.gov.uk/system/files/docs/2017/11/shetland_new_energy_solution_decision_-_final_0.pdf

Cost efficiency of options

Ofgem have noted that SHE-T “has prioritised the development of its proposed 600MW option and not developed other options to the same extent”¹⁶. In Statkraft’s view there are important and significant consumer benefits that arise from building a larger link i.e.

- An 800MW link costs 6% more than 600MW¹⁷ yet delivers 33% more capacity, which is 26% more cost effective than 600MW.
- An 1000MW link costs 12% more than 600MW¹⁸ yet delivers 66% more capacity, which is 48% more cost effective than 600MW.

It is noted that in its NINES decision Ofgem did not reject the distribution link because of a cost inefficiency, but because “a more cost-efficient solution is now available”, a similar situation now presents itself in relation to the size of the transmission link for Shetland. Just as the distribution link was too small and therefore inefficient, so is the proposed 600MW link.

Ofgem’s SWW guidance confirms that “TO’s have a statutory obligation to develop and maintain the transmission system in an efficient, coordinated and economical manner”. Just as an undersized distribution link is inefficient, so is an undersized transmission link.

Delivery Dates

As a result of analysis by our consultants¹⁹, Statkraft do not accept that delivering these larger links will take until Q4 2025 as is claimed by SHE-T, and take the view that any delay can be reduced by immediate and proactive action by SHE-T. Statkraft requests that Ofgem immediately instructs SHE-T to restart developing the 800 and 1000MW options with the supply chain.

Impact on Distributed Generators

Statkraft notes that Ofgem has flagged in the consultation an expectation that TNUOS transmission charges could in future apply to distributed generation. As a developer of a transmission connected generator which will pay TNUOS charges Statkraft does not see why a new distribution connected generator, which also exports power from Shetland to mainland Scotland, should benefit from the transmission connection without contributing to the costs. However, the costs that will be imposed are outside the control of distributed generation developers; and SHE-T has a number of options available yet has chosen to develop a more costly and inefficient solution. As regulator, it is Ofgem’s duty to protect the interests of future customers who may wish to connect distributed generation but may be prevented from doing so by TNUOS charges outside their control.

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

Ofgem’s SWW guidance states “To justify the Needs Case for an SWW proposal, transmission owners must show what would happen without the proposed reinforcement...this comparative analysis provides a strong test that the proposal is in the interests of consumers”.²⁰ As any such analysis has been redacted²¹, a key part of the Needs Case is unavailable for stakeholder comment.

¹⁶ Para 2.25

¹⁷ Table 3 – Capex of Option 2 - £709m (600MW) and Option 3 - £753m (800MW)

¹⁸ Table 3 – Capex of Option 2 - £709m (600MW) and Option 4 £797m (1000MW)

¹⁹ See Sections below: “Delay due to Planning” and “Delay due to Procurement”

²⁰ <https://www.ofgem.gov.uk/publications-and-updates/guidance-strategic-wider-works-arrangements-electricity-transmission-price-control-riio-t1-0>

²¹ The ESO report discusses a “counterfactual” case but all the costs appear to be redacted.

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”²². 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.

Economic Impacts in Shetland

Regarding 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, Statkraft calculates²³ that the increased benefit to the Shetland economy from fully utilised HVDC links as £65m for 800MW and as £134m for 1000MW, 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.

LWR Analysis

Considering the ESO LWR analysis Statkraft notes that:

- The highest generation scenario is only 742MW. Vis-à-vis the 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 generation scenarios reflecting the current project portfolio and an annual growth rate from 2025 to 2035.
- When the 800MW link is delivered at the same time as the 600MW link, then it is the most cost effective in LWR.
- 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.
- 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 18-month period. Statkraft is 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. It is inappropriate to include these constraint costs in a consultation unless Ofgem is committed to sanctioning such payments.
- Statkraft has estimated that the cost of these spurious constraints for the GHD-S4 scenario of 742 MW of generation as £214m²⁴ which changes the LWR analysis to favour Option 4 (800MW link) by £175m.
- 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.

Impact of TNUOS charges and risks to consumers.

The increase in cost efficiency and value for money for larger links will be reflected in lower Transmission Use of System Charges (TNUOS). These lower charges will ensure that

²² Para 2.30

²³ Details of calculation in Appendix 3.

²⁴ 741MW for 18 months at 53% load factor - constraint cost of £60/MWh with 25% of constraints remaining due to remote transmission constraints.

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. There is no discussion or analysis in the needs case of the risk of to consumers of unused transmission network capacity of a 600MW vs larger link sizes given the impacts of TNUOS. Ofgem recognised a similar situation (regarding delay) in the Caithness Moray decision noting the risk of reduced investor confidence and financing would “increase the likelihood of a weaker generation scenario and result in lower overall benefit from a reinforcement”. Ofgem should ensure that similar risks are weighed for Shetland as it did for Caithness Moray.

Ofgem “agree that if VEFW is built ... it is highly likely that sufficient additional generation will be built on Shetland before 2035 for a 600MW link”; if generation can be competitive with the higher TNUOS charges of smaller link, then it is even more likely that a larger link can be filled with generation due to the lower transmission charge.

Question 4 Conclusion

In conclusion, Ofgem should send-back the Needs Case to SHE-T and ask that the CBA and LWR are rerun with a wider range of generation scenarios, without imposing wind constraints before the links are built, with 2*600MW links as an option, with an assessment on the impact of TNUOS charges in fully utilising the link. Until these updates are completed, stakeholders will be unable to comment effectively and fully on the LWR analysis.

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

Cost benchmarking

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 generation in 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 an appropriate combination of sizing, benchmarking and/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, Statkraft does 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.

Ofgem NINES decision

In Ofgem's decision on the Shetland New Energy Solution²⁵ Ofgem rejected the original SHEPD proposal because the costs "were not... the most efficient and effective" also it was stated that Ofgem's decision "enables potential further savings to consumers from a joined-up solution" and "the costs of the energy supply solution for Shetland are efficient and therefore in the interests of consumers". Statkraft expects Ofgem to ensure that SHE-T delivers such savings and efficiencies in a larger transmission link.

SHE-T re Caithness Moray and Orkney

Statkraft notes that SSE have previously increased the rating of the Spittal converter from 600 to 800MW in order to "secure network capacity to meet future generation requirements in an economic and efficient manner"²⁶. DNV-KEMA stated that SHE-T "provided no evidence to support the least regret analysis to support the proposed increase in HVDC link capacity from 600 to 800MW". It is noted that Ofgem approved the increased capacity.

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 and in Caithness. No explanation that could possibly justify this difference in treatment has been put forward, and Statkraft does not consider that any could be given.

Ofgem decision on Caithness Moray

In the decision for Caithness Moray, Ofgem stated "There is a significant amount of generation that wants to connect in the area but is currently unable to due to the lack of transmission capacity. Given the amount of generation with connection contracts, consented, under construction or already connected there is a high degree of certainty that an additional reinforcement is required." A similar statement can be made for Shetland with regard to the size of the link. Ofgem also noted that the Caithness Moray project "would contribute to the UK's low carbon pathways and medium-term commitments (e.g. 2020 targets)". Given the UK's signature of the Paris Agreement, the request by UK and Scottish Governments to CCC leading to the Net-Zero report and the forthcoming shortfall in Carbon Budgets identified by BEIS, the Shetland link should be efficiently sized to contribute to these needs which have not been addressed in the Needs Case.

Ofgem stated that Caithness Moray would facilitate "market participant diversity on the Scottish Islands"; it is clear that a smaller link will limit diversity in terms of projects, ownership and technologies whereas a larger link to Shetland would facilitate greater diversity.

Ofgem State of the Market Report

In its 2017 State of the Market Report²⁷ Ofgem state "rapid falls in the costs of wind and solar generation show the scope for competition to limit future cost increases. But consumers will lose out if there isn't effective competition for low carbon support scheme and for measures to help the energy system work more efficiently" and "meeting these challenges will be tough. But our ambition is clear – collectively we need to build a

²⁵ 30 November 2017.

²⁶ DNV KEMA report for Caithness Moray 18th March 2014.

²⁷ https://www.ofgem.gov.uk/system/files/docs/2017/10/state_of_the_market_report_2017_web_1.pdf

transformed energy sector that provides secure and clean energy to consumer – at a cost that consumers recognise as fair.”

Statkraft take the view that building a larger link to connect Shetland is something that consumers would recognise as more efficient and therefore fair. A larger link will support more effective competition, particularly in future CfD rounds for projects like Energy Isles which is not ready to compete in the 2019 CfD round. Shetland may present Ofgem with a “tough challenge” but it is an opportunity for Ofgem to demonstrate its stated clear ambition.

Question 5 Conclusion

In conclusion the evidence strongly supports the 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.

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 1000MW option with a unit cost is £797k/MW, far more cost effective than the 600MW option at £1,182/MW; therefore, it is expected that the successful bidder in any competition would deliver the largest link.

Statkraft supports measures to reduce the costs of transmission and reduce the delays and risks in building transmission. At this moment, for Shetland, Statkraft supports Ofgem’s view not to competitively tender, provided that SHE-T provide options to build all three link sizes 600,800 & 1000MW.

There are additional challenges with competition for the Shetland connection due to the multi-terminal HVDC design, including the option in the ABB contract for Caithness Moray for the Shetland link²⁸. The consultation does not discuss these issues or how they would be solved and therefore there is a risk of delay and uncertainty with a knock-on impact on generation investment and on the Shetland economy, bearing in mind the additional need to replace the Lerwick Power Station.

Questions 7,9,10 – no responses.

Additional comments that do not fit the questions

Delay due to Planning

The consultation states “SHE-T has prioritised development (e.g. securing planning consent) of its proposed 600MW option and not developed the other options to the same extent before submitting the Final Needs Case. By prioritising in this context, SHE-T has progressed its optioneering so that the 600MW option from Shetland to Caithness is one of the few options capable of being delivered within the parameters of the current planning consent (the only other option is the 450MW option which doesn’t perform well in the CBA)”.

²⁸ <http://www.abb.com/cawp/seitp202/3f413ceb177da589c1257e11004f3605.aspx>

Statkraft have commissioned a report by Arcus which has thoroughly reviewed the planning applications and process for Caithness Moray and Shetland. There is no evidence to support the statement that there is any planning barrier. Regarding the planning at Upper Kergord and Noss Head Switching Station the Arcus report states: “there is nothing overtly in either permission limiting the Shetland HVDC link to 600MW” and the existing planning “would allow the installation of an HVDC building similar in size and footprint to that commissioned at the Blackhillock converter station (1200MW) or Spittal Substation (800MW)”.

Delay due to Procurement

Another reason for an 18-month delay between delivering the 600MW and larger 800/1000MW options is given as procurement. Statkraft have had the consultation documents, including the Mott MacDonald report, reviewed by two HVDC specialist consultancies including TNEI. Both consultants agree that the delay is very considerably overestimated. TNEI’s report states “Although there could be some delay... these delays are unlikely to be as extensive as the delay envisaged in the consultation (18-24months). TNEI estimates total delays could be up to 12 months and could be minimised with a proactive approach, particularly if the time before CfD contract award is used productively with the cable and converter manufactures”. Another consultant estimates a 9-month delay.

Delivery Date

There is a contradiction in the consultation regarding delivery date. Ofgem state “we have concerns as to whether the SPV model would be able meet the required March 2024 energisation date of the Shetland link. This is because to align with the current delivery timescales, the SPV tender would need to have been completed by early 2020” yet delivery of an 800MW or 1000MW link by SHE-T who already have a head start on design and procurement, is stated to be Q4 2025 some 18-24 months later. Given that there is no specific planning limit to the link size (see above) the evidence is contradictory and requires review.

SWW Process

Ofgem’s SWW FAQ²⁹ states that “We will consult stakeholders on our needs cases and project assessment to inform our decisions on whether to approve the proposal”. Therefore, an SWW project should be expected to have three consultations, – one on the Initial Needs Case, one on the Final Needs Case, and one on the Project Assessment. In the light of the clear statement of policy by Ofgem, Statkraft and other stakeholders have a legitimate expectation that all such consultations will take place.

In the consultation Ofgem state “The Shetland transmission project did not have an Initial Needs Case as the project had already been substantially developed by the time we introduced the Initial Needs Case stage into the SWW process”. The SWW process was set up in 2013 and the 600MW HVDC connection to Shetland was originally proposed in 2007³⁰. Statkraft fail to see why these circumstances would preclude an Initial Needs Case or a similar consultation. In Statkraft’s view this consultation should serve as the Initial Needs Case consultation; the Final Needs Case consultation should come after the CfD Auctions results later in 2019; followed by the Project Assessment consultation.

²⁹ <https://www.ofgem.gov.uk/publications-and-updates/strategic-wider-works-faq>

³⁰ TNEI report for Highland and Islands Enterprise “Assessment of Grid Connection Options for the Scottish Islands 27th March 2007

Ofgem's SWW Guidance³¹ states Ofgem will assess "any opportunity for additional economical anticipatory investment to meet future need". Ofgem have not done so in their assessment, especially given the greater cost efficiency of larger links and the lower costs to generators and consumers that would result.

The Guidance states Ofgem will "consider the process by which the TO will ensure that its proposed design remains the most efficient solution as the project progresses"; ensuring that SHE-T progresses all three options to 1000MW and by reassessing the Needs Case after the CfD auction results Ofgem can comply with their Guidance.

The Guidance states that the "final needs case submission is made after ...stakeholder consultation is completed"; this consultation is the first consultation on this project and therefore the final needs case can be assessed as proposed after the CfD results.

Ofgem will "consider how the TO has adjusted/reviewed its proposals"; Ofgem should note that the 600MW link was proposed in 2007, before any significant wind generation on Shetland had planning or grid connection agreements.

Statkraft's proposal for Ofgem to review after the CfD Auction is supported by the SWW Guidance: "given the possibility of new relevant information coming to light such as changes in government energy policy or other important factors, we expect that the assessment and decision-making process may be iterative in some cases".

Ofgem can send back the proposal to the TO if "we consider that a submission does not contain all the relevant information that we need to carry out our assessment". In Statkraft's view the information in this response would justify such action by Ofgem.

Social and Environmental Guidance to GEMA

The guidance³² states that the "Government considers that the Authority has an important role...ensuring connection to the electricity networks for new ...renewable generation"; by ensuring that SHE-T provide the option for a larger link, Ofgem can ensure that there is sufficient connection capacity on Shetland for Energy Isles to be generating in 2025, consistent with a CfD bid in 2021. The Energy Isles project has entered the planning process with an unprecedented level of community support and investment. Without a larger transmission link Energy Isles cannot be developed in a manner and timescale consistent with its development plan.

Way Forward

In the consultation³³ Ofgem state "We appreciate that it may not be feasible or desirable from a cost/resourcing perspective to progress all link options to the same level prior to the Final Needs Case process. However, we consider that in this instance initial/interim findings of the CBA could have been determined earlier (before SHE-T's decision to prioritise the 600MW option) and more efficiently integrated into SHE-T's optioneering process. It would also have been possible for SHE-T to have presented information to us earlier and sought our views as appropriate. As set out in paragraph 1.6, the SWW process set out in the SWW Guidance includes a formal initial needs case stage as a mechanism to seek to mitigate the sort of risk described in paragraph 2.26 above. However, we would also expect Transmission Owners to efficiently mitigate these risks without the need for Ofgem intervention".

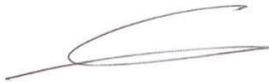
³¹ <https://www.ofgem.gov.uk/ofgem-publications/125277>

³² <https://www.ofgem.gov.uk/ofgem-publications/74203/file37517-pdf>

³³ Para 2.27

Statkraft recommends that Ofgem request SHE-T to progress the 800MW and 1000MW options in order to ensure that, pending the outcome of the CfD auction, the final needs case decision can be made based also on up-to-date evidence of government policy, scenarios, needs, costs and timescales, supported by independent consultants reports, and on a CBA and LWR that do not include spurious, hypothetical costs of wind constraints, so that a clear comparison can be made and the most efficient option for connecting Shetland can be selected.

Yours sincerely,
for Statkraft UK Ltd

A handwritten signature in blue ink, appearing to be 'Guy Nicholson', written over a horizontal line.

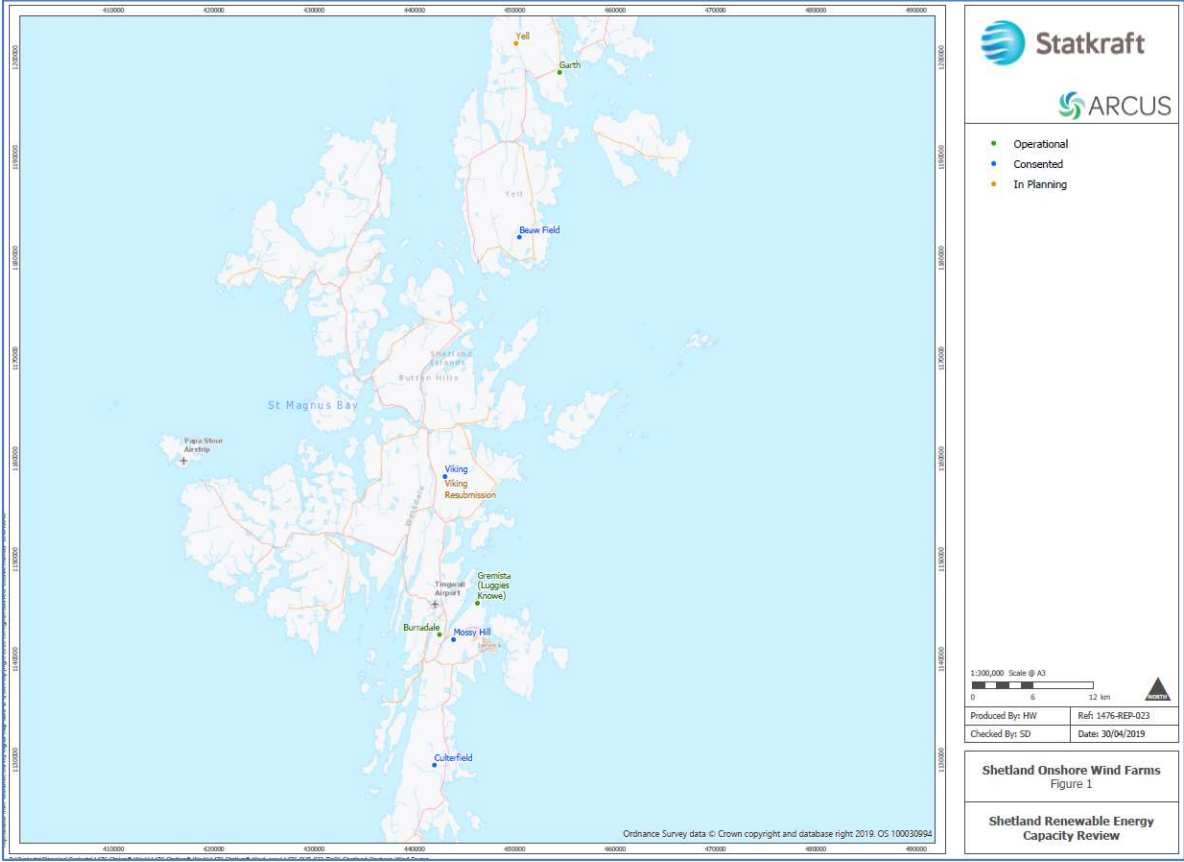
Guy Nicholson CEng
Europe Grid Manager

cc. David Flood, Managing Director, Statkraft UK Ltd.
Knut Drystad, Head Advisor Strategy

Appendix 1 - List of Shetland wind generation projects, status and capacities.

Shetland Wind Generation Cumulative Capacity MW			
TEC Registered	Cumulative MW	MW	Year
Viking		457	
Beaw Field		72	
Energy Isles (TEC)		120.3	
Total	649	649	2018
With Planning			
Mossy Hill		49.9	
Luggies Knowe - ext		6	
Culterfield		2.7	
Total	708	59	2019
In planning			
North Hoo Fields ext		0.9	
Energy Isles extra capacity		80	
Total	789	81	2019
Operating			
Settter Croft		0.05	
Hillhead		0.05	
Brae		0.1	
Olaberry		0.33	
North Hoo Fields		0.05	
Burradale		3.7	
Garth		4.5	
Luggies Knowe		3	
Total	801	12	2019

Appendix 2 – Main wind projects map in Shetland



Appendix 3 – Calculation of increased benefits to Shetland of well utilised larger links

From Table S-9: Present Value socio-economic benefit (£m 2018 prices) <i>new data in italics</i>								
Generation Senario		S3	S4		SK -1	SK- 2	Increases	
	MW	655	742		801	1000	800	1000
		PV	PV	<i>delta</i>	PV	PV	PV	PV
Transmission Options		£m	£m	£m/MW	£m	£m	£m	£m
Option 2 600MW			193					
Option 3 800MW		208	238	0.34	258		65	
<i>Option 3a/4 1000MW</i>			238	0.34		327		134

Appendix 4 - Infographic on Shetland link

