

Neven Point Wind Ltd

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Ofgem

Orkney Transmission Project: Consultation on Final Needs Case and Delivery Model

Background and Executive Summary

Neven Point Wind Ltd (NPW) is currently developing a windfarm site on the Island of Eday to the North of the Orkney Mainland (part of what is locally termed the North Isles). The proposed maximum development will be up to 7 turbines each (probably) of 4.3MW – thus a maximum export capacity of 30.1MW.

The company has applied (December 2018) for a Distribution connection to SSEN's distribution network and expects to receive an offer in March 2019.

The site had already gone through a sifting exercise of all possible Orkney wind sites (as described within the 'Areas of Search' in the local authority's (OIC) supplementary planning guidance) in 2009/10 by planning specialists Terence O'Rourke Ltd. It was found to be favourable as a high wind resource area (typically averaging wind speeds over 10m /sec, and to be of low-medium planning risk.

Its geography, in an assessment at the time, placed it behind more accessible projects (for easier grid connection) on the Orkney Mainland and 3 of these sites were taken to pre-planning, including landowners options, bird studies and preliminary EIA work by a joint venture company involving Dennis Gowland – who is now co-owner of NPW Ltd. Two of these sites were later transferred to another developer who has, since, taken these through the planning process.

Neven Point Wind Ltd is a locally (Orkney) owned wind development company formed in 2018. The founders of the company and only current Directors are; Nick Joy, a major Eday landowner whose family have farmed on the Island for over 200 years, and Dennis Gowland who has been involved in large scale wind development on Orkney since 2002.

Dennis Gowland, through previous joint venture operations, first, with Fairwind-Statkraft Ltd (2005-2009) and then, with Orkney Wind Company Ltd (2009 – 2015), has considerable experience of Transmission and Distribution level contracts with (the then) SHEPD, SHETL and NGET.

The NPW project on Eday is part of a potential total wind generation capacity (including projects being developed by others) of, currently, 84MW in the North Isles. This, together

with a large potential for tidal generation, to the west of Eday around, the Falls of Warness could easily grow to become 2 or even 3 times that capacity. This level of critical mass could support the efficient use of more cable infrastructure going forward and supporting the network begun with the proposed 220MW transmission cable between Orkney and the Scottish Mainland.

Q1 Do you agree that the current network on Orkney needs reinforcing in order to connect additional generation?

The current cable connection is through 2 x 33kV cables giving a total export capacity of around 40MW which were laid in order to provide security for distribution level consumers in Orkney. The older of the cables is now due for renewal. There is around 75MW of generation connected to the Orkney distribution network under the Active Network Management Scheme and there is no availability for further connections on the system.

The 33kV system is not efficient for transmission along 50km of cable with high transmission losses and consequent reduction in real Co2 reduction compared to the level it could be at 220kV.

The opportunity to harness some of the best wind, wave and tidal resources in Europe is currently being unfulfilled. There are currently over 160MW of Wind and up to 150MW of Tidal in various stages of development, none of which would be able to connect without transmission level reinforcement.

We agree that SSEN's original needs case submission, bearing in mind Ofgem's preliminary 'minded to' position, of a 220kV AC transmission link is, technically, the most efficient and economical solution for Orkney – given the need for headroom to accommodate future wind, wave and tidal generation.

Q2. What are your views on the generation scenarios developed by SHET-T? We are particularly interested in views on the likelihood of wind generation progressing without subsidy support and the likelihood of tidal generation around Orkney developing to the levels predicted by SHE-T scenarios.

NPW supports the generation scenarios put forward by SSEN in its original needs case. We believe that any model for Orkney should include the following:

Transmission connected wind bidding in CfD 2019 round (currently at 40MW)

Distribution connected wind (BELLA/BEGA) bidding in a later CfD round

Distribution connected wind – subsidy free

Transmission connected tidal bidding in CfD or subsidy free

Without subsidy –

NPW is undecided at present and may look to a CfD round in 2021. However, if reasonable use of system charges, which do not automatically debar transmission from Orkney, are in place then there may well be an economic case for operating subsidy-free, given the high levels of production (in the region of 45-50%) for wind.

The case for subsidy –free falls away if increases in Distribution Generation Use of System charges begin to approach those of TNUoS.

In our view it would be overly pessimistic to rule out tidal in the mix of Orkney generation – given that the cable and associated infrastructure is unlikely to be in place until 2024 – and given that there are already tidal devices delivering power into the local grid at the Eday site (EMEC).

Given that the life of the cable is expected to be at least 25 years (it could be more than this given the lifespan of the older of the existing 33kV marine cables) the level of resource available and the fact that the foremost European development hubs for wave and tidal machines are in Orkney – then it would be reasonable to assume that increasing levels of marine generation would be part of the generation mix.

Q3. What are your views on the technical design and costs of the proposed Orkney link?

Based on work done by Dennis Gowland investigating the possibility of a private link in 2003 (pre-BETA) and with Fairwind Statkraft working with SHETL in 2007-8 (advance services) on a Transmission link across the Pentland Firth, NPW is of the opinion that the design and costings put forward by SSEN are robust, economical and efficient. The chosen landfall at the Orkney side and the buried cable route to the sub-station at Finstown is, in our view, most likely to be acceptable to the Orkney community.

As far as longer term capital costs are concerned – though this proposed Transmission infrastructure is not likely to make a difference to the earlier of the 33kV subsea distribution cables to be replaced - there may well be a direct saving on the remaining cable (due to be replaced 10-15 years later) and to the need to keep and maintain the current diesel power station in Kirkwall

Q4. Do you agree with our concerns that a constraints-based CBA may not robustly demonstrate the true consumer cost/benefit of a radial extension to the transmission network?

It would seem that one of Ofgem's key issues with the constraints-based CBA, offered by SSEN in its needs case submission, is that without the cable there would be no constraint costs as there would be no generation at the end of it to constrain off. A circular argument, which, in hard logic terms, could be applied to any proposed radial infrastructure on the GB network. Yet this model is routinely used throughout the network as an industry standard and the substitution by another, much more pessimistic model, just for this infrastructure, seems to be unreasonable unless there are very clear reasons to make it so.

Much of the reasoning behind Ofgem's reluctance to accept the SSEN CBA seems to turn on the uncertainty of generation using the cable in the future and the ability of individual generators to manage volatility in Use of System charges going forward. This view is also predicated on discounting future marine generation, even though Orkney is ahead of other places currently feeding into the GB network of harnessing this resource.

In answer to these concerns, I would like to bring to attention a specific element codified in the CSUC as a result of CMP213 (Project TransmiT) in July 2014.

I refer to 14.15.92 (version 2017)

14.15.92 Where a Transmission Owner has designed a local onshore circuit (or otherwise that circuit once built) to a capacity lower than the aggregated TEC of the generation using that circuit, then the local security factor of 1.0 will be multiplied by a Counter Correlation Factor (CCF) as described in the formula below;
$$CCF = \frac{D_{min}}{T_{cap} + G_{cap}}$$
 Where; D_{min} = minimum annual net demand (MW) supplied via that circuit in the absence of that generation using the circuit T_{cap} = transmission capacity built (MVA) G_{cap} = aggregated TEC of generation using that circuit CCF cannot be greater than 1.0.

[\(Apologies for problem in formatting of the equation\)](#)

The Counter Correlation Factor (CCF) came about after extensive modelling, carried by ICIT in Orkney, was submitted and accepted by the CMP213 work group and subsequently voted unanimously into the Original and all WACMs (Ofgem accepted WACM2). The model demonstrated the likelihood of different renewable technologies sharing a radial link where the generating resources were present in the same geographical area. Scenarios of Wind v Wave, Wave v Tidal and Wind v Tidal were investigated with the factors of around 35-40% for Wind v Wave and around 15% for Wind v Tidal.

We doubt whether this was modelled in the SSEN CBA as it is not part of the Wider and Diversity parts of the CMP213 modification – but nevertheless it is part of the methodology for calculation of charges.

CCF has 2 main effects:

- 1) The encouragement of local diversity and more effective use of the infrastructure in that more generation can connect throughout the life of the link without the need to construct additional infrastructure until the 'overuse' of the cable becomes significant and offering fewer periods of constraint. More security of supply to the GB network in offering diversity of non-cost volatile energy sources – helping to offer longer term downward pressure on wholesale electricity price driven by increase in fuel costs. There would be a consequent increase in the saving of Co2 enables by the radial link.
- 2) The ability for generators of different technologies to share, in terms of charging, would help to cushion the effects of increases in Use of System Charges – whilst having no effect on the expected return to the consumer of the charges (the Use of System 'take' would still be commensurate with the TEC of the link). The result – which could be a reduction of as much as 35-45% of local Use of System for wind

and wave generators sharing could mean the difference between generators absorbing charging increases rather than going bust and leaving an underused asset.

We believe the net effect of CCF should serve to reinforce the case for the SSEN CBA.

Q5. What are your views on the “additional CBA”, outlined in this chapter, which has been used to sense check the results of the original constraints-based CBA?

Please refer to our answer to Q4.

Q6i What are your views on our proposed conditions of approval? Do you agree with our view that the information available does not demonstrate that building a 220MW connection to Orkney would be beneficial for GB consumers if only 70MW of generation came forward to use the link? Do you agree with our proposal to set a minimum-generation threshold of 135MW?

It is our view that the Ofgem initial response to the SSEN needs case CBA model does not give enough (if any) weighting to the likely medium and long term use of the infrastructure, and thus, the reduced risk to the consumer of possible stranding, whilst also not giving enough weight to the diversity/security of supply and impact on longer term wholesale prices. Whilst NPW have had neither the time nor the resources to prepare an alternative, detailed, economic model we hope our broader-brush outline and in particular the potential effect of CCF may give sufficient comfort to retain the SSEN parameters. The initial ‘snapshot’ at the trigger date (which may now be moved to April 2020), of confirmed generation, will not be a true representation of the likely generation coming forward in the year to three years following this date – which will still be before the construction date of the cable (2023-4). These developments in the pipeline (to at total as it stands now of 160MW wind and up to 150MW of tidal) are already based on extensive sifting exercises and will have sunk considerable amounts of local money, by the time of the trigger date, in pre-planning.

We believe that the 70MW modelled by SSEN as the ‘tipping point’ is reasonable and that there is only marginal benefit in risk management in upping this figure.

Q6ii Do you agree that the fact of a generator signing up to SHE-T’s ‘Alternative Approach’ does not provide an adequate level of certainty that the generator will progress to full commissioning?

On the contrary, we strongly believe that the more flexible nature of the AA approach- rather than a one-size-fits-all approach - better reflects the particular background to Island developments and especially where there are likely to be higher hurdles of environmental, archaeologic and landscape issues to overcome. Developers in the frame have assessed these difficulties – but have weighed the higher production levels of the resource and, in most cases, the high local ownership of the projects as offering higher chances of success. The

ability to enable projects to move up and down the local queue depending on regular assessments of progress will reduce the instances of drop-outs due to slippage of only a few months, and thus the risk of stranding.

Q6iii. Do you agree that the award of a CfD to a generator would provide an adequate level of certainty that the generator will progress to full commissioning?

No. This would be an additional hurdle particular to the Orkney circuit and would tip any project not ready to fulfil the requirements of the bidding process by May 2019 off the list.

Q6iv. Do you agree that, in the absence of a CfD, a generator securing planning consent and finance to construct a project is a good indicator of a project's likelihood of progressing to commissioning?

Why is there a need to make conditions more onerous in the Orkney context which would have the effect of placing additional barriers to entry compared to others wishing to use the Network?

Q6v. If you answered no to questions (iii) and (iv) above, can you propose any alternative ways to assess, to an adequate level of certainty, whether a generation project will progress to commissioning

We understand that this is about balance of risk and risk management rather than a guarantee of certainty. We believe that the securities and liabilities encoded in the CUSC, post CMP192, and the ability fix securities at £1, £2, £3 prior to connection trigger date on contracts signed up with the DNO/TO/SO should be an adequate backstop.

Q7-Q10

We have no specific points to make in answer to the above questions other than that we support the project plan set out by SSEN in its original Needs Case submission as it seems to be economic and efficient.