

17 June 2020.

Mr James Norman,
Head of New Transmission Investment,
Ofgem.

My response and objections on the Final Needs Case for the Shetland transmission link project.

Dear Mr Norman,

I have prepared the detailed response below to object to the installation of submarine cable and converter station as replacement for the existing generating station at Lerwick. However it has become clear today as I prepare to send my objection document to you that Ofgem is not an honest broker in this decision.

On Monday, contractors began work on the access track to the converter station which is apparently paid for in part by Ofgem. This morning SSE announced that they will proceed with the Viking Energy Windfarm.

It is clear that you have already made your decision to approve the cable and have already informed SSE of your decision.

My grounds for objection are principally costs to the Shetland consumer, not just in monetary terms but also the environmental costs and effects of the giant industrial windfarms on mental and physical health.

What has to be considered here is that nowhere in Britain, Europe, or perhaps the World, has such a number of giant industrial turbines ever been built in such close proximity to the dwellings of a settled population. The population is an isolated island one that does not have an option to move further away from or out of sight of the windfarms. Shetlanders will not be living next to an industrial windfarm; they will be living in one.

Shetland's tourism industry is now a mainstay of Shetland's economy and there is no doubt that the scale of the proposed windfarms and associated infrastructures on a small island group will degrade this industry almost to insignificance.

I am not opposed to renewable energy projects in Shetland, provided that they strike the right balance between the needs of the community and the impact of wind farming on the natural environment and resident populations.

I suggest there is no need for the HDVC link and that the proposed new gas fired power station is the best value for consumers and for the Shetland environment. This proposal would allow for the development of a small scale windfarm and tidal array within the Shetland grid.

Question 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 generation scenario presented now goes far beyond what was envisaged when the Viking Energy Project was conceived and planning permission granted.

It is clear that Viking Energy windfarm is not big enough to support the proposed interconnector cable, so on its own is uneconomic. It has therefore sought to encourage other wind farming companies such as Peel Energy and Energy Isles (a company with shareholders in Viking Energy) to build giant industrial windfarms across Shetland. So far, planning permission has been granted for Peel Energy's industrial windfarm in South Yell and another near Scalloway. Planning is underway for other windfarms such as the giant Norwegian owned Energy Isles windfarm in North Yell. The total planned windfarm footprint on the ground so far is 14.3% of the land area of Shetland Mainland and 15.3% of Yell.

Windfarms now granted or in the planning process will stretch in a practically unbroken line through the length (and much of the width) of the islands for over 70 kilometres (all on peat) on an island chain of low hills that is 110 km long and only 10 km wide at the widest point. Access roads and power lines along with at least 12 super quarries will criss-cross and permanently scar the hills for 150 km.

Shetland has a treeless landscape with a highest hill at only 450 metres. Turbines range from 145m to 200m in height, all on hills ranging in valley to floor height of 80m to 120m meaning that there will be nowhere in Shetland that the turbines, roads or super-quarries can't be seen from. Of a total of about 160 of these giant industrial machines over 100 will be within 2km of dwellings (illegal in England but not Scotland) and some as close as 800m.

If all this goes ahead unchecked then at least 12% of Shetland's total land area will be windfarms with more in the pipeline. Shetland will lose a unique and fragile landscape, which unlike the rest of Scotland escaped the ravages of the last glaciation. If 12% of mainland Scotland was covered in turbines on the same scale, meaning that the turbines were half the height of Ben Nevis I doubt if Scotland would have a tourism industry.

Question 2: *What are your views on the demand sensitivity explored by SHE-T?*

In a post-Coronavirus world, with declining investment in the oil and gas sector, it is impossible to imagine a scenario where that sector would seek to invest in high risk 'renewables' exported from Shetland.

Question 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.*

There is simply no evidence that an interconnector is 'essential' for Shetland's energy needs. The opposite is the case. The case for the cable is being driven purely by the capacity of Viking Energy and associated wind farms which are far beyond what Shetland consumers require.

A second link would serve only to increase industrial wind farm proliferation across the islands with further environmental damage, destruction of tourism as well as increasing physical and mental stress on the residential population.

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

The huge converter station is to be located in Shetland's most picturesque and geomorphologically unique valley. It is completely out of scale with its surroundings and cannot be in any way screened.

Given the history of the unreliability of long undersea cables elsewhere in the world there is a high likelihood of faults occurring in the cable. With a hostile marine environment between Shetland and Scotland there is no guarantee that any fault could be rectified within a reasonable timeframe, so a robust backup generating capacity will need to be installed in Shetland. The proposal for backup generation seems far from robust.

The route of the cable offshore crosses fishing grounds used by trawlers of all nations and at the nearshore lies close to fish farming and shellfish growing sites. There are clearly risks to the cable from trawls and anchors.

It is clear that longer the cable the higher the risk and higher the cost of manufacture and repair and backup. This is costs that will be borne by the consumer for a cable that is not the best energy solution for Shetland.

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

This and strangely redacted documents released later were presumably redacted to reduce critical comment by objectors. Options other than cable interconnectors should have been considered.

Shetland windfarms connected to the cable will be at the end of the line. Shetland windfarms will be the most expensive to operate and maintain. They will be the first to be switched off when the national grid is unable to accept windfarm output. With the number of windfarms operating and planned in Scotland and offshore it is likely that 'Shetland shutdown' may become a fairly frequent occurrence.

On 22nd May 2020 wind farms in Britain were paid a record £9.3m to switch off their turbines for just one day! It is clear that SSE and other operators are looking to receive constraint payments for shutdowns are part of their economic model for their operations in Shetland. Hardly value for money for consumers.

Not one amp of power generated by these giant, out of scale, consumer subsidised windfarms is for use in Shetland, it is all for export down the cable. There is no guarantee of any community benefit after the shareholders and owners of the windfarms have taken their cut.

Costs of the cable, backup, grid modifications and the Ofgem subsidised converter station have not been satisfactorily quantified, as is the cost of the Viking and other wind farms. Clearly from estimates this will exceed £1 billion and as is almost a rule with huge construction projects will run well over budget. All costs for the consumer to absorb.

The sensible alternative to the interconnector is that Shetland's generating needs be supplied by the recently proposed gas fired power station plus LNG terminal in Lerwick. The details of this suggested replacement for Lerwick power station I am sure you are already aware of. This alternative is a low carbon, risk free option and at a cost of £60 million which makes the cable/interconnector/wind farms option totally unjustified.

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

In your assessment the Shetland consumer should have priority over the GB consumer. The Shetland population will be living within a giant industrial windfarm, not the consumers in the great, energy wasting, conurbations of mainland UK. When the alternatives are considered a cable is far from being the best solution for Shetland consumers. It seems that you have not considered the recently proposed alternative gas fired power station combined with small scale renewables.

Even in an ideal world it is far from certain, even unlikely, that 'renewables' from Shetland would make economic sense - the risks of failure to export through a long cable from an unpredictable power source with uncertain construction and operating costs is too high.

Question 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?

I do not agree with your proposal for reasons expressed above, also:

The driver in the Viking Energy project and associated windfarms waiting on the cable is no longer 'green energy for local income' with the withdrawal of Shetland Charitable Trust from the project.

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?

Detailed costs of construction, operation and contingency and source of finances for the project should be in place.

The motive of the developers is purely opportunism for them alone to benefit from subsidy. Pre-development ground works already carried out on Shetland by SSE have already shown that they intend to bend the environmental rules and have already done irreparable environmental damage. If construction and operation costs mount up beyond expectation the first casualty will be environmental constraints.

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

I do not agree that you have considered all relevant factors, nor have you justified the imposition of the Viking Energy Windfarm and other giant windfarms on Shetland consumers.

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

Yes, public health and the environment.

Much has changed since the original Viking Energy Project was initiated without the benefit of a Public Local Inquiry over 15 years ago. At that time it was said that the Viking windfarm would be the only windfarm on the islands exporting power via cable. This is no longer the case and the negative effects on Shetland of the proliferation of windfarms needed to make the cable viable should be considered.

Turbine size has greatly increased since 2005. In the last 15 years much information on the effects of infrasound and audible noise on those living in proximity to large industrial plant need to be considered. The turbines planned for use by Viking Energy and other developers are designed for use offshore, not in close proximity to dwellings. 71 of Viking Energy's 103 turbines are positioned within 2km of houses, some as close as 1km, some of Peel Energy's are as close as 800m. If serious

physical and mental health effects are found in the population then the responsibility lies with, and solution will need to be considered, by Ofgem.

Unlike the oil industry infrastructure, wind farm companies are *not* required to remove access roads and turbine bases at the end of wind farming. Access roads will be left un-maintained *in situ* to continue disrupt natural drainage and destroy tracts of moorland. At least a million tonnes of concrete and steel that make up turbine bases will be sunk into the peat and will also be left *in situ*. The alkaline concrete in the acid peat environment will form a leachate that will spread out from the turbine base to kill peat forming sphagnum moss for many hundreds of years. Ferrous salts from the steel reinforcing will also eventually leach out in the acid environment to kill the moss in an ever increasing area for many hundreds of years. Although wind farmers like to play the ‘tackle climate change’ card, the fact remains that industrial scale windfarms built on Shetland’s deep peat will make no contribution to the reduction of carbon emissions.

A recent survey by Mountaineering Scotland shows that industrial windfarms have a clear negative impact on visitor numbers in scenic areas on mainland Scotland. For the comparatively small and narrow island land areas like Shetland, which will be 100% visually impacted by windfarms, the negative effects on visitor numbers will be catastrophic.

Question 8: Do you agree with the findings of our analysis?

No.

The HDVC link is not required to find the right balance between environment and island scale renewables and the best energy mix for Shetland. No viable environmental case has been made for the building of industrial windfarms across Shetland to export power through the HDVC link. Even if the Shetland windfarms are successful in the Contract for Difference (CfD) auction there is no guarantee that any community benefits can be paid, indeed it is the electricity consumer, including those in Shetland that will have to pay for the CfD subsidy.

In 2018 Scottish windfarms were paid £115 million in subsidy not to produce electricity because there is already more windfarm generating capacity than the national grid requires. The largest payment of this public money went to SSE to keep their giant Inverness-shire windfarm idle for 29% of its capacity. Despite this all these companies wish to increase the size and number of windfarms, not to generate more power but to farm more subsidy; e.g. some windfarms in Scotland are seeking to double the number of turbines with heights of up to 220 metres (722ft).

Classing onshore wind in Shetland as offshore wind does not necessarily bring Shetland building and operating costs in line with UK onshore wind. Such classification does not guarantee higher efficiency hence the recent application for larger turbines by Viking Energy. If the HDVC link is granted there is nothing to stop Shetland windfarms increasing the size of their proposed turbines in an effort to increase efficiency. In any event, when generating capacity exceeds that which the grid requires, or links can cope with, it will be the windfarms with the highest build and operating costs along with transmission power losses, i.e. the Shetland windfarms, that will be shut down first.

Question 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?

Any benefit to the UK consumer of the cable to Shetland is dubious at best with a high risk factor of windfarm shut down and high level of unnecessary subsidy. Your main consideration should be the Shetland consumer. It is clear that due consideration be given to the safer, more reliable and much cheaper option of the recently proposed gas fired power station in Lerwick.