

From: [REDACTED]
To: [Norfolk Vanguard](#)
Subject: Norfolk Vanguard Project 010079.
Date: 23 March 2020 21:31:10
Attachments: [viewpoint3landform2.png](#)
[viewpoint7landform2.png](#)

Dear Planning Inspectorate,

I would like to comment on the applicants response to the request for information on the control of noise during operational phase. I am very concerned that the operational noise limit set at 35dB 5 minutes and 32dB 15 minutes is not being questioned. Up to now, every body involved, have been satisfied with the noise limit set for the Vanguard and Boreas substations, as it was simply set at the same level as the Dudgeon substation, already built on the same site. The Dudgeon noise limit can be verified on page 6 of the Planning Permission Document 3PL/2012/070S/F.

[http://dudgeonoffshorewind.co.uk/construction/consenting_docs/Necton%20\(substation\)%20Decision%20Notice.pdf](http://dudgeonoffshorewind.co.uk/construction/consenting_docs/Necton%20(substation)%20Decision%20Notice.pdf)

There is a massive difference being over looked. The noise limit is set at the edge of the nearest noise sensitive receptor, based on the measured baseline background noise. The nearest noise sensitive receptor to Dudgeon, is a house positioned very close to the very busy A47 main road. With the almost constant traffic noise, the arithmetic average measured background noise will be relatively high. In contrast, the nearest noise sensitive receptor to the Vanguard and Boreas substations is a house in Ivy Todd, a quiet hamlet of 11 houses.

The applicant states in their comments on deadline 5 submissions, regarding the Boreas application ExA.ASR.D6.V1 Deadline 6 Colin King's submission, that the arithmetic average sound level recorded at SSR2 (Ivy Todd Farm) was 28.4dB between 28/4/17 and 5/5/17. And yet Breckland Council set the same limit as Dudgeon, 35dB 5 minutes 32dB 15 minutes, seemingly ignoring the baseline background noise measured by the applicant. As this limit stands, the Vanguard substation will be heard in Ivy Todd, West End Bradenham, and by Vale House, virtually constantly.

I am more than concerned that with the best attention of the applicant, and Breckland Council, and their joint effort, through the WTG meetings working to BS.4142. that no account of the existing nature of the most affected area, of closest residents is being used. In an urban or industrial area, it is acceptable to set a noise limit slightly higher than to average background noise, as it would be difficult to decipher from the many existing noises. In naturally quiet areas, like Ivy Todd and West End Bradenham, where on still days only bird song, and an occasional distant dog barking can be heard, it is I believe normal to set the noise limit 10dB below the average background level, as there are so few existing noises to loose the constant operational noise amongst.

Planning Noise Advice Document Sussex 2.2 Guidelines And Criteria 2.2.1. BS41442:2014. states the noise limit should be set at the background noise level, or up to 10 dB below where noise creep could be a problem.

<https://www.adur-worthing.gov.uk/media/media.121802.en.pdf>

I have discovered more concerns regarding the set noise limit while looking through the Boreas application, and I would like to include them here, as they are as relevant to Vanguard.

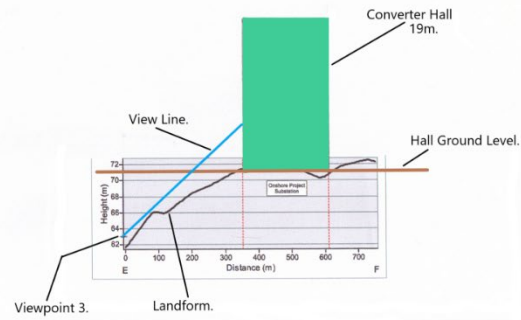
In addition to my last submission regarding the baseline noise monitoring, I have now noticed out of the 12 monitoring locations around the substation area, only 2 monitoring point's results are actually published for long term monitoring (1 week), and another point's results were for 1 day instead of a week. In the short term tests 1 location was missed, access problems were put forward as a reason, but no explanation is provided for the situation with the long term tests. The baseline background noise limit is a very important element, with regard to the impact on residents around the substation. This I feel has been set too lenient at 32dB at 750m from the substation. The Dudgeon's limit is 32dB at 450m, Orsted's Hornsea 3 Annex 8.4, fig 1.2 shows 32dB at 300m, and the Daedalus's limit is 30dB at 245m for comparison. A diagram in the Daedalus Audible Noise Assessment shows 27.5 dB at the first property (245m) These comparable figures, and the shortfall in the background noise monitoring results leads me to question whether this figure was derived with the due care, and the realised importance required. The results published in Appendix 25.1 Baseline Noise Survey, Onshore Project Substation I find concerning, when compared to the 32dB at 750m limit set. Table 2.15 shows the results for the long term monitoring. SSR2 is in Ivy Todd, and at a similar distance to the closest residents. The daytime results for SSR2 show an average background noise level of 32.2dB. This must mean, half the day, the background noise level was above the substation noise level, but half the day, the background noise level was below the substation noise level, meaning the substation would be heard in Ivy Todd for half of every day when it should actually be quiet, (a quality of Ivy Todd that residents and walkers expect and value). The 1 standard deviation + of 37.3dB and - of 27.1dB gives an indication of the range of values recorded. I consider the +1 standard deviation, and greater arbitrary, as once the background noise outweighs the problem noise, covering the problem noise, it is of no relevance how great the existing background noise gets. The -1 standard deviation in contrast shows how naturally quiet the area gets, and consequently how progressively more the substation noise will be noticed. -2 and -3 standard deviations would show the lower results recorded, under 27.1dB, and possibly below 25dB. Night time results show the average value recorded was 28.4dB, substantially below the 32dB set limit. Consequently the substation would be heard most of the night. And with a -1 standard deviation of 22.3, this would suggest the natural background noise must be below 20dB at times. SSR1 results show that Necton's Baseline Background Noise level is above 32dB most of the time, plus it is further away from the noise source than SSR2, so SSR1 results would seem satisfactory. SSR4 and SSR10 West End Bradenham should have been monitored, to represent close residents and a X3 holiday let business, in a very quiet area. Wood Farm should have been monitored. SSR7 Top Farm has results showing it's background noise also above 32dB most of the time, so this could be considered satisfactory. This just leaves SSR2 Ivy Todd to work with, where the above results clearly show it would be heard in Ivy Todd half of every day, and all every night, at the agreed

32dB@750m. I suggest it not unreasonable to consider this unsatisfactory. This would affect at least 11 properties, including a high end b&b, in Ivy Todd. Who knows the effect on West End Bradenham and Wood Farm, as no attempt was made represent them. Top Farm's background noise readings SSR7. are substantially higher than Ivy Todds, in fact always above 32dB, even at -1 standard deviation, possibly adding an advantage to it as an alternative site. The short term monitoring test results are more complete, apart from SSR2 Ivy Todd which I feel is one of the more important locations. I also question the purpose of the short term tests, other than to easily produce extra data to add weight to the Baseline Noise Survey. A 12 month sample would be far more representative and valuable, than the 2 samples gained over a week, and the third long term sample gained over a day, so what is the value of an hour? Anyway the hour results during the day show 2 locations with a result lower than 32dB, and I think it is reasonable to suggest SSR2 Ivy Todd would have also show a low recording if it had been included. During the night all 10 locations except 1, showed a reading below 32dB, the majority substantially lower, and again SSR2 I feel would have also been under 32dB. The results or data from a Baseline Noise Survey should not be lumped together and averaged to form a value to base the projects noise limit. Each locations results should be considered individually, and simply the limit should be set as close as possible to the lowest recorded reading, at the closest properties. Monitoring points should be at all the closest properties, but I notice Wood Farm is not included, with their closest monitoring point some 800m further away from the substation, behind them. Another observation with the noise limit set at 750m means potentially an area of 768 acres of land is covered in noise above 32dB. This would appear a very vulnerable situation, with the slightest wind causing a massive amount of sound energy to potentially travel miles. The applicant must take this into account and reduce the noise level accordingly, so that the 32dB sound limit at 750m is not exceeded, even down wind of the project. With a large area of sound like this, the potential for accidentally exceeding the limit, either through miscalculation, or unusual weather conditions is greater than if a tighter limit was set, like the 450m, 300m and 245m limits set on the aforementioned substations. In my submission regarding the mitigation of the potential visual impacts of certain onshore works proposed as part of the Norfolk Vanguard Project, I highlighted the very noticeable difference between the landforms rendered in the applicants photo montages and 3D visualisations, which largely conceal the 19m converter halls in viewpoints 3 and 7, when actually in reality, these landforms are virtually nonexistent, leaving the converter halls very visible. The applicant was asked by the Boreas ExA, amongst other things, to provide Landform Cross-Section diagrams of Viewpoints 3 and 7. I placed on these Landform Cross-Section the converter halls, mitigating trees and a line of view from the exact viewpoint, to the converter halls. I am including the diagrams and description here, as I regard this a fundamental problem in the Vanguard application.

I would like to comment on some of the applicants answers to the ExA's written questions. 2.9.3.3. I found the cross-sections of the land form provided by the applicant of little use. I have taken the cross- section diagrams and added a 19m converter hall, a level ground, line of view, a viewpoint at 1.5m, and mitigating trees where applicable, using the appropriate scales. This again shows a discrepancy when compared to the photo montages. After completing the diagrams, which again appeared different to what I expected, I realised they are not drawn to scale. The applicant used one rate of scale for distance, and another for the height. The result is a diagram compressed in length, and overly high. This makes the line of view falsely steep, and the point it intersects the hall unrealistically high. If the diagram had been prepared in scale, it would be much longer, the line of view much shallower, and most of the converter hall would be visible, as I have always suspected.

Thank You For Your Attention, Colin King. 20012468.

Viewpoint 3. Scenario1. Landform Cross-Section + Converter Hall, and View Line Positioned In Scale.



Viewpoint 7 Scenario 1 Landform Cross-Section +Converter Hall, Mitigating Trees, and View Line Positioned In Scale.

