



## SPR EA1N and EA2 PROJECTS

### DEADLINE 13 – NOISE - COMMENTS ON APPLICANTS D12 RESPONSES

Interested Party: SASES PINS Refs: 20024106 & 20024110

Date: 5 July 2021

Issue: 1

#### INTRODUCTION

1. The following comments are made on the Applicants Responses (REP12-034) to SASES D11 submissions in respect of noise to which SASES has only responded by exception.
2. The fact that SASES has not responded to any particular comment made by the Applicant does not mean that SASES agrees with the comment. SASES will continue to rely on its Written Representations and its subsequent submissions.
3. The comments below in relation to the Approach to Tonality Another Comparable Projects goes to the issue of the Applicants' non-compliance with the first bullet point of 5.11.4 of EN-1. This issue was discussed in the meeting between ESC, the Applicants and SASES on 16 June 2021 as set in SASES submissions in respect of Action Point 4 of ISH 17 Action Points and the notes of the meeting as set out at Appendix 1 of that submission (REP12-122).
4. These comments have been prepared by SASES with the assistance of its acoustics expert, Rupert Thornely-Taylor. The references are set out on the last page of this submission.

#### Approach To Tonality In Other Comparable Projects

1. In section 2.3 ID2 statements are made asserting that the approach taken regarding noise prediction and mitigation is in line with the approach taken on several other comparable projects. The statements are incorrect and this note provides the relevant details of the projects concerned. Other matters of inaccuracy are also noted.
2. On page 29 the Applicants state that:

*“The majority of DCO applications for offshore wind farm projects do not provide specific details of 1/3 octave band noise levels. Instead they rely on fixed limits specified within a DCO requirement with the expectation that these limits will be designed to during the detailed design process. This has been the case on numerous offshore wind farm DCO applications or consented via the Town and Country Planning Act, such as:*

*Galloper Offshore Wind Farm;  
Hornsea Project TWO Offshore Wind Farm;  
Hornsea Project THREE Offshore Wind Farm;  
East Anglia ONE Offshore Wind Farm;  
East Anglia THREE Offshore Wind Farm;  
Norfolk Vanguard Offshore Wind Farm;  
Norfolk Boreas Offshore Wind Farm; and  
Moray West Offshore Wind Farm.”*

3. The Environmental Statements for three of these projects adopt approaches which should have been followed in the case of EA1N and EA2. Two more specifically address the 1/3 octave band noise spectrum in their draft DCOs.

### **Hornsea Project TWO Offshore Wind Farm**

4. Chapter 9 of the Environmental Statement states on page 9-19<sup>i</sup> “Spectral data are provided in Annex 6.9.2. Transformers are modelled as a tonal ‘hum’; reactors and converters are modelled with a low-frequency spectral shape provided by Siemens; and the cooling plant is modelled as a low-frequency broadband ‘whoosh’”<sup>ii</sup>
5. Annex 6.9.3 of the Environmental Statement reports noise predictions carried out in 1/3 octave bands

### **Hornsea Project THREE Offshore Wind Farm**

6. The Environmental Statement at page 24 states “*Detailed assessment undertaken for the operation of the onshore plant using generic spectral shapes for each noise source to enable a spectral assessment to be undertaken and tonality of noise immissions to be considered.*”
7. Annex 8.3 contained an assessment in 1/3 octave bands<sup>iii</sup>.

### **East Anglia THREE Offshore Wind Farm**

8. Paragraph 51 of Chapter 26 of the Environmental Statement Volume 1 states<sup>iv</sup>:

*“51.Noise from electricity infrastructure can contain tonal components (the “mains hum”). As such, a 6dB rating penalty has been applied to predicted noise levels from the substation(s) when assessed to BS4142.”*

### **Norfolk Vanguard Offshore Wind Farm; Norfolk Boreas Offshore Wind Farm**

9. The draft DCO for Norfolk Vanguard contained a specific requirement relating to tonality that took specific account of a 100Hz tone at any noise sensitive location.

*27 (1) The noise rating level for the use of Work No. 8A must not exceed 35dB LAeq (5minutes) at anytime at a free field location immediately adjacent to any noise sensitive location*

*(2) The noise rating level for the use of Work No. 8A must not exceed 32 dB LAeq (15 minutes) in the 100Hz third octave band at any time at a free field location immediately adjacent to any noise sensitive location.*

10. The draft DCO for Norfolk Boreas contains a specific more demanding requirement relating to tonality that took specific account of a 100Hz tone at any noise sensitive location by making use of an unweighted (dBL rather than dBA) noise limit at any noise sensitive location.

*27.—(1) The noise rating level for the use of Work No. 8A must not exceed 35dB LATEq(5 minutes) at any time at a free field location immediately adjacent to any noise sensitive location.*

*(2) The noise rating level for the use of Work No. 8A must not exceed 32 dB LLeq(15 minutes) in the 100Hz third octave band at any time at a free field location immediately adjacent to any noise sensitive location.*

### **Further Matters Raised**

11. On page 30 the Applicants challenge SASES’ submission that the findings in the EA1 Onshore Substation Operational Noise Assessment (REP5-022) are flawed. SASES’ reasoning is

extensively set out in REP6-135. In terms of the Projects substations emitting tonal noise, the substations include substantial transformer plant and it is well established that transformers emit tonal noise.

12. In section 2.3 on page 33 the Applicants state *“Control of noise from the Projects is considered to be significantly less challenging than the design challenges associated with fixed plant proposals on schemes that SASES’ noise expert has promoted e.g. the Thameslink Programme, Crossrail and HS2”*. This is incorrect. During the House of Commons Committee stage of the HS2 Phase 1 Bill the committee requested a detailed submission of the assessment and engineering control of transformer noise. Prior to the enactment of the Crossrail Act, Rupert Thornely-Taylor (as the expert referred to) carried out detailed measurements of comparable plant on the previously constructed Jubilee Line Extension. The Thameslink scheme utilised existing infrastructure.
13. On page 33 the Applicants state in *“Committing to the noise limits means that the Applicants carry this risk and not the residents”*. Treating compliance as a risk without completing adequate pre-consent calculations does not fulfil the requirements of Policy EN-1.
14. On page 33 the Applicants state *“The Applicants clarify that the “additional distance” refers to the additional noise attenuation that would occur if the noise was predicted at SSR9.”* SSR9 is within 250m of Little Moor Farm Knodishall.
15. On page 33 the Applicants state *“It is agreed that the background noise level is a matter of fact. So too is the need to apply BS4142:2014+A1:2019 correctly and consider context, as per section 11 of the standard, to properly derive Lowest Observed Adverse Effect Levels (LOAELs) and Significant Observed Adverse Effect Levels (SOAELs)”*. The wording of BS4142’s consideration of context increases the noise impact in Friston *“an incongruous sound by comparison to the acoustic environment”*
16. On page 35 the Applicants state *“The above extracts suggest that residual sound within the dwelling will further mask sound from the plant. Secondly, an internal level of BS8233 with acoustically distinguishing characteristics indoors is suitable for a bedroom. Thirdly, it is noted that the residual and ambient level is considered as well as the background sound level”*. The extract quoted says the opposite: *“no significant acoustically distinguishing characteristics”*
17. On page 36 the Applicants state *“The Applicants do not fully understand the point being made by SASES here, although maintain that NANR45 is not relevant and that audible tones are suitably addressed through the application of BS4142:2014+A1:2019”*. BS4142 says in 1.3 *“NOTE Information on the assessment of low frequency noise is given in NANR45 [1, 2].”*

### **Post-Deadline 11 Engagement with SASES**

18. The content of Section 3 does not fully reflect the outcome of the meeting between the experts, and a full meeting note is contained in SASES Deadline 12 submission REP12-122 paragraphs 2-4 and at Appendix 1.

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<sup>i</sup> <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010053/EN010053-000350-7.3.09%20Noise%20and%20Vibration.pdf>

<sup>ii</sup> <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010053/EN010053-000454-7.6.9.3%20Operational%20Noise%20Assessment.pdf>

<sup>iii</sup> [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-000639-HOW03\\_6.6.8.3\\_Volume%206%20-%208.3%20-%20Operational%20Noise%20Model%20Input.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-000639-HOW03_6.6.8.3_Volume%206%20-%208.3%20-%20Operational%20Noise%20Model%20Input.pdf)

<sup>iv</sup> <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010056/EN010056-000439-6.1.26%20Volume%201%20Chapter%206%20Noise%20and%20Vibration.pdf>