Response to the Examining Authority's first written questions prepared by Rupert Taylor

East Anglia ONE North & East Anglia TWO

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This document sets out the response of SASES to the Examining authority's first written questions in relation to the application by East Anglia ONE North Ltd for East Anglia ONE North Offshore Wind Farm and by East Anglia TWO Ltd for East Anglia TWO Offshore Wind Farm.

Question	SASES response
ExQs 1 **1.0 Overarching, general and cross-topic questions**	
1.0.8	The National Infrastructure Commission's Design Principles for National Infrastructure in respect of People state: "Find opportunities to improve the quality of life for people who live and work nearby and, acknowledging that it won't always be possible to please everyone affected by the project, take steps to mitigate negative impacts" The designs of the EA1N and EA2 projects do not meet this principle because the requirements of the DCO will not properly mitigate negative impacts due to noise from both construction and operation. **Construction** The outline Code of Construction Practice (CoCP) is deficient, and this is of great importance since Requirement 22 states that the full CoCP for which approval must be obtained from the local authority must accord with the outline code of construction practice. Consequently it is necessary that matters which are essential for inclusion in the final CoCP should be foreseen in the outline CoCP. The applicant has stated that the main objectives of the CoCP with regard to managing construction noise are to "Minimise

	noise and vibration impacts on nearby residents and other sensitive receptors to acceptable levels; and Comply with relevant legislation, requirements, standards and best practice relating to construction noise". As explained in Annex 2 below the applicant's stated position, in the Environmental Statement (ES), of what are acceptable levels is based on an erroneous application of the principal standard for construction noise. There is no commitment in the CoCP to employ the best practicable means (BPM) to minimise noise and no commitment to apply for consents under the provision of Section 61 of the Control of Pollution Act 1974 (CoPA). Because of the effective disapplication of Section 82(1) of the Environmental Protection Act 1990(c) (summary proceedings by person aggrieved by statutory nuisance) by 3(7) of each DCO, a person affected by construction noise, in the absence of the use of S60 of CoPA by the local authority, or action by the LA for breach of a CoCP approved pursuant to a requirement of the DCO, has no recourse other than action in Common Law in the High Court The draft CoCP is seriously deficient as set out in Annex 1 below. The Construction noise assessment in the Environmental Statement (ES) contains errors and misstatements which are explained in Annex 2 below. Consequently there is no adequate means of achieving mitigation of the effects of construction noise on people. **Operation** The requirements of Part 3 26 and 27 of each DCO in respect of noise will not adequately mitigate the effects of operational noise on people for three reasons. The limiting noise levels are based on erroneous treatment of noise in the ES for the reasons further set out in Annex 3 below, including failure to take into account the special features of several predominantly single-frequency noise sources together which result in higher than normal combined levels, the inappropriate choice of background noise level, and the limitation of the requirement to two fixed addresses when higher noise levels may occur at other addresses. .

Annex 1 **Submission reference**

Deficiencies of the Outline Code of Construction Practice

1. The outline code of construction practice contains a section “Noise and Vibration Management” which consists of seven paragraphs. The main objective is to minimise noise and vibration impacts to acceptable levels, with no statement as to what those levels are, and to comply with relevant legislation, requirements, standard and best practice relating to construction sites.
2. As explained in Annex 2 below, the section of the ES which deals with “acceptable levels” misstates the content of BS 5228 and fails to take account of best practice in a recent document issued by the Highways Agency (LA 111) or to follow best practice as for example followed by other major projects such as HS2 or Thames Tideway Tunnel.
3. Best practice, as evidenced by the draft HS2 CoCP and the Thames Tideway Tunnel draft CoCP prepared at the DCO application stage, both include a commitment the contractors will be required to seek consents from the relevant local authority under Section 61 of the Control of Pollution Act 1974 for the proposed construction works. BS 5228-1:2009+A1:2014 provides information on the application of the Section 61 process.
4. Current best practice is to require that the contractor shall ensure BPM,as defined under Section 72 of the CoPA, at all times for all activities in order to minimise noise and vibration from the works.
5. In the absence of a S61 consent, enforcing a failure to follow the CoCP will be a long drawn out process, possibility necessitating proceedings for a breach of a DCO requirement, whereas breach of a S61 consent is an offence.

Annex 2 **Submission reference**

Errors in the construction noise assessment in the Environmental Statement

6. The ES (page 22 paragraph 74 and page 47 Table 25.26) relies on the "ABC method" described in BS5228-1:2009+A1:2014. Contrary to the statement made in the ES this method does not establish that there is no impact below the three thresholds presented. The "ABC" method appears in the Standard as one of several examples to illustrate ways of assessing significance, The examples are offered as guidance which "might be useful in the implementation of discretionary powers for the provision of off-site mitigation of construction noise arising from major highways and railway developments". The Standard offers significance assessment based on fixed noise limits and an alternative based on noise change. Two noise change methods are offered, the first being the ABC method, and this has been widely used on many major projects. It offers a decision matrix for potential significant effects at dwellings. If the case in which the ABC method is applied leads to an outcome that does not exceed the significant effect threshold, this does not mean there is no impact and there is no statement to that effect in the Standard.

7. The Design Manual for Roads and Bridges document LA111 Revision 2 May 2020, Table 3.12, takes BS5228 further into the setting of LOAEL (Lowest Observed Adverse Effect Level) and SOAEL (Significant Observed Adverse Effect Level) values and says that LOAEL is the baseline and SOAEL is the ABC threshold. This is in sharp contrast to the ES which falsely says the ABC threshold is the boundary between no impact and negligible impact

8. Although LA111 is about highway construction and not substation construction, it would be wholly inconsistent to apply one interpretation to the same kind of noise when it was for road construction and then switch to another interpretation when entering the substation site.

9. National Policy Statement EN-1 states

"5.11.9 The IPC should not grant development consent unless it is satisfied that the proposals will meet the following aims:

- avoid significant adverse impacts on health and quality of life from noise;
- mitigate and minimise other adverse impacts on health and quality of life from noise; and
- where possible, contribute to improvements to health and quality of life through the effective management and control of noise."

Annex 3

Deficiencies in the operational noise assessment in the ES.

10. A detailed analysis of the operational noise assessment in the ES is given in the report prepared for SASES by Rupert Taylor Ltd dated 30 October 2020.

11. This shows that an important feature of these two applications is that two similar substations will be operated near to each other, and the principal sources of noise in each will be transformers and associated equipment in which the acoustic source is the second harmonic of the line frequency. Noise from transformers and many of the other items associated with them is concentrated at the frequency of 100 Hz, and when two sounds of predominantly single frequency are combined, constructive interference occurs in locations where two or more sources are in phase. In such circumstances it is the sound pressures, not the sound intensities that have to be added which results in an increase in noise level of several dB above the result of applying conventional methods for sound sources that are not predominantly single-frequency. The pressure sum of two similar sources results in an increase of 6dB as opposed to 3dB for sources with a random phase relationship which is the commonly used assumption in noise prediction methods.

12. The ES conclusions, from which the noise limit in the draft DCO has been derived, are based on a background sound level of 29 dBA. It is shown in the Baseline Noise Survey Report that the night-time background is in the low 20s on many occasions and was measured at less than 17 dBA. and on those occasions the tonal noise emitted by transformers will be clearly perceptible, attracting a penalty for tonality of +6dB. The ES also shows, using the same statistical methodology, a background noise level of 25 dBA at one of the closest receptors in the Friston area.

13. The combined rating level at the specified locations, predicted in the ES for EA1N and EA2 as 30.1 dB(A), will be in excess of the DCO limit of 34 dB(A) with the inclusion of a 6 dB tonal character correction. Where the background is 25 dB(A) there will be a difference between the rating level and the background sound level of more than +10 dB. The effect of constructive interference would result in a further increase in actual sound level.

14. The ES predictions make the assumption that mitigation will be included in the form of noise enclosures, particularly for the main transformers, which assumes that they have very high sound insulation performance. Further mitigation, for example enclosure of other sources which predominate over the enclosed transformers, may be difficult to achieve.

15. Even if the excess above background is reduced by even further mitigation, to achieve compliance with the DCO limit of 34 dB(A), then in locations where the

background level is 25 dB(A) or less, the difference between the rating level and the background sound level +9 dB or more.

16. A difference between the rating level and the background sound level of around +10 dB or more is “an indication of a significant adverse impact” according to BS 4142. EN-1 at 5.11.9 states that significant adverse impacts on health or quality of life should be avoided.

17. The proposals would be in contravention of the requirements of EN-1.