

SUFFOLK ENERGY ACTION SOLUTIONS'
REBUTTAL TO NGET RESPONSE TO SEAS RR
NOISE and VIBRATION

SEA LINK: EN020026

SEAS IP: [REDACTED]

DEADLINE: 2 – December 9, 2025

Date: 9 December 2025

This document constitutes SEAS rebuttal to the Applicant's Response to SEAS Relevant Representation [\[RR-5210\]](#), as set out in:

[\[REP1A-043\]](#) - 9.34.1 Applicant's Comments on Relevant Representations Identified by the ExA – Specifically Table 2.59 SEAS- Noise and Vibration

1. Introduction

The Applicant's response REP1A-043 Table 2.59 SEAS- Noise and Vibration to SEAS' RR-5210 (including Rupert Taylor Ltd's Acoustic Report) on NOISE & VIBRATION contains little that's new, merely regurgitation and an effort to re-present what SEAS has already commented on in its RR 5210. Therefore, SEAS refers to its RR and subsequent WR.

SEAS finds the core shortcoming in the National Grid Electricity Transmission (NGET's) response is its failure to include a specific, enforceable operational noise limit within the draft Development Consent Order (DCO). Despite offering a maximum noise threshold of 34 dBA and committing to avoid significant adverse effects, NGET relies on future detailed assessments and non-binding commitments that lack the legal enforceability of a DCO Requirement.

Furthermore, while NGET confirmed using a worst-case 100 Hz frequency for modelling, the response dismisses concerns about potential room resonance and constructive interference at this low frequency as non-material.

Finally, a reported misquotation of BS 4142 (omitting the word "around") was acknowledged only as a "typographical error", leaving the underlying issues of uncertainty and lack of strict accountability unaddressed.

SEAS has consulted with acoustic expert Rupert Taylor Ltd to review NGET's responses, please see attached below their findings, ***Rupert Taylor Ltd letter*** and ***Appendix of 9 December 2025***

Suffolk Energy Action Solutions
(SEAS)
By email

09 December 2025

Dear SEAS,

Application by National Grid Electricity Transmission for an order granting development consent for the Sea Link project (EN020026)

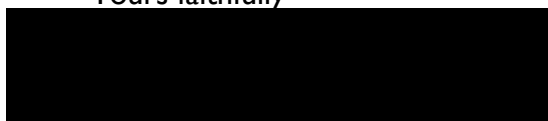
I have reviewed the Applicant's response to the Relevant Representations made by SEAS, and my detailed comments are set out in the attached Appendix.

Above all the principal issue is the need for specific noise limits in the Requirements schedule of the DCO. A commitment given outside the DCO prior to or during the DCO examination process does not have adequate enforceability and, in the absence of a Requirement, in the event of a failure or breach the process of enforcement will be cumbersome, lengthy and expensive, requiring technical argument to prove that there has been a failure or breach.

Breach of a requirement contained within the DCO is much more readily enforceable.

Secondly, relying on future unspecified design effort to avoid significant effects is only acceptable if it is demonstrated that the mitigation measures to be applied are feasible from an engineering point of view, and that achievement of the outcome relied on is enforced through explicit Requirements contained within the DCO.

Yours faithfully



Director

APPENDIX to RUPERT TAYLOR LETTER of 9 December 2025

Theme	Summary of relevant representation	Applicant’s response	SEAS Comments
Operational Noise Impacts: Saxmundham Converter Station	<p>2.1 Incomplete Design and Unverifiable Assumptions</p> <p>2.1.1 Appendix 2.9.D of APP-138 acknowledges at paragraph 1.1.1 that the operational noise assessment is based on a generic converter station design, stating: “...this assessment is indicative and based on outline design information and is (sic) does not therefore provide a definitive indication of noise impacts...” (APP-138, paragraph1.1.1, p. ii).</p> <p>2.1.2 It further asserts that the generic model represents a "likely worst-case scenario" but provides no supporting evidence or technical parameters that demonstrate how this can be concluded to be “likely worst case”. This introduces unacceptable uncertainty to this DCO.</p> <p>2.1.3 By contrast, in the East Anglia ONE North DCO process, similar generic designs were accepted only because the DCO contained specific, enforceable operational noise limits as part of the Requirements.</p> <p>2.1.4 Sea Link’s draft DCO includes no such binding requirement. There is therefore no enforceable mechanism to ensure future compliance with acceptable operational noise thresholds.</p>	<p>An indicative assessment is presented in 6.3.2.9.D ES Appendix 2.9.D Suffolk Operational Noise Assessment [APP-138]. The assessment is based on plant noise data from other similar projects and is therefore representative of a reference design that would serve the operational purpose of a converter station. The indicative design (pre-mitigation) does not directly consider potential noise impacts in its design and layout and can therefore be thought of as an ‘off the shelf’ converter station design. The mitigation assumed in the assessment are standard measures, such as enclosures, and can also be thought of as ‘off the shelf’. Further detailed assessments will be undertaken by the converter station designer and specific noise mitigation measures will be incorporated in the design. It is for this reason that the reference design is considered to be worst case.</p> <p>An indicative assessment is presented in 6.3.2.9.D ES Appendix 2.9.D Suffolk Operational Noise Assessment [APP-138]. The assessment is based on plant noise data from other similar projects and is therefore representative of a reference design that would serve the operational purpose of a converter station. The indicative design (pre-mitigation) does not directly consider potential noise impacts in its design and layout and can therefore be thought of as an ‘off the shelf’ converter station design. The mitigation assumed in the assessment are standard measures, such as enclosures, and can also be thought of as ‘off the shelf’. Further detailed assessments will be undertaken by the converter station designer and specific noise mitigation measures will be incorporated in the design. It is for this reason that the reference design is considered to be worst case.</p> <p>Application document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and</p> <p>Commitments (REAC) [APP-342] includes commitment NV07 which states that:</p> <ul style="list-style-type: none">● the Saxmundham Converter Station and Friston substation will include noise mitigation measures in the design;● Proposed substations and converter stations will be designed such that noise from their normal operation does not cause a significant adverse effect at nearby noise sensitive receptors; and● Additionally, where feasible the substation and converter station designs will	<p>Paragraph 2.7.98 of EN-3 states "The Secretary of State should consider the noise and vibration impacts according to Section 5.12 in EN-1 and be satisfied that noise and vibration will be adequately mitigated through requirements attached to the consent."</p> <p>Paragraph 5.12.12 of EN-1 states "Applicants should submit a detailed impact assessment and mitigation plan as part of any development plan, including the use of noise mitigation and noise abatement technologies during construction and operation." This has not been done.</p>

seek to achieve noise levels at nearby noise sensitive receptors in line with the aims of the local authorities, or otherwise as low as reasonably possible.

A specific operational noise limit for the proposed Saxmundham Converter Station has not been proposed following discussions with East Suffolk Council, who raised concerns that such a limit may be seen as a target rather than an upper limit. The aim of the local authority is for the noise rating level to be below the representative background sound level (when assessed in accordance with BS 4142:2019+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’ (BS 4142).

The Applicant agrees in principle with trying to achieve this aim, although this may not be achievable at the nearest noise sensitive receptors (NSRs) (noting that the night-time background sound level is used). However, this aim is above and beyond (i.e. more stringent than) the requirements of national planning policy and guidance, including:

- Overarching National Policy Statement for Energy (EN-1),
- National Policy Statement for Electricity Networks Infrastructure (EN-5),
- National Planning Policy Framework (NPPF)
- Noise Policy Statement for England (NPSE)
- Planning Practice Guidance for Noise (PPGN).

The indicative assessment indicates that although the noise rating level may exceed the representative background sound level at the nearest NSRs, both the background sound level and the noise rating level would be low. In such cases, BS 4142 states that:

“For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low .

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night”.

The assessment therefore goes on to consider absolute noise levels with reference to applicable guidance, including:

- World Health Organization (WHO) Guidelines for Community Noise (GfCN);
- WHO Night Noise Guidelines (NNG);
- The Association of Noise Consultants (ANC) BS 4142:2014+A1:2019 Technical Note Version 1.0;
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS 8233);
- The Chartered Institute for Building Services Engineers (CIBSE) Environmental Design Guidance – Guide A; and
- Planning Practice Guidance for Noise, 2019 (PPGN).

Based on the above guidance, the assessment considered that a noise rating level not exceeding 34 dB LAeq,T externally (free-field) at NSRs would be below the Lowest Observed Adverse Effect Level (LOAEL) which is considered a reasonable threshold or ‘limit’ for potential adverse effects.

This statement is at odds with East Suffolk Council's Local Impact Report "6.3.7.5 If a below background rating is not possible then the applicant needs to propose an operational noise rating level that is the lowest they can reasonably achieve with full justification as to why that is the case. This rating level, determined using BS4142 in order to take account of any acoustic character to sound emissions and, importantly, the local context, will also **need to be secured via a DCO requirement**. In addition, ESC will require a firm commitment to reduce the rating level further at the detailed design stage if it is possible to do so. Operational Noise reduction must be a fundamental design principle, and this should be clearly stated in the relevant DCO documents so that the project is accountable at implementation stage."

This limit needs to be written into Development Consent Order

	<p>The indicative assessment presented in the ES indicates that operational noise levels below this level are achievable.</p> <p>Above the LOAEL, PPGN states that effects should be mitigated and reduced to a minimum. Below the LOAEL, PPGN states that no specific measures are required. As such, the Applicant’s commitment to “seek to achieve noise levels at nearby noise sensitive receptors in line with the aims of the local authorities, or otherwise as low as reasonably possible” goes above and beyond the requirements of national planning policy.</p>	
	<p>Regarding point 2.1.3 specifically (with respects to the different approaches used by the SeaLink and East Anglia ONE North projects), the East Anglia ONE North noise rating limit of 34 dBA is derived from being 5 dB above their representative measured background sound level data (of 29 dB LA90). The SeaLink project uses more conservative representative background sound levels in its assessment, despite background noise levels being comparable between the two locations. The conservative background sound levels are intended to help reduce operational noise levels by setting a lower ‘anchor’ for the design aim. The more conservative nature of the SeaLink assessment means that further consideration of planning policy and guidance is required where the rating levels exceeds relevant threshold relative to the background sound level, but where the sound rating level is still low. This extra step was not required by the East Anglia ONE North assessment due to their representative background sound levels being higher. The 34 dBA upper noise rating threshold proposed by the Sealink project is therefore based on the planning policy and guidance described above. However, the East Anglia ONE North assessment also relates the 34 dBA limit to PPGN and NPSE compliance, although they do not rely on this in their assessment. A 34 dBA ‘limit’ is therefore comparable between the two projects.</p>	<p>The issue is that the noise limit needs to be written into the DCO</p>
<p>2.2 Misquotation and Misapplication of BS 4142:2014+A1:2019</p> <p>2.2.1 The assessment in APP-138, paragraph 1.2.4 (p. iii) misquotes the relevant British Standard BS 4142, omitting the qualifying word "around" in the thresholds of adverse and significant adverse impacts. The ES states: “A difference of +10 dB or more is likely to be an indication of a significant adverse impact... A difference of +5 dB could be an indication of an adverse impact...”</p> <p>2.2.2 BS 4142 (2014+A1:2019) actually states: “A difference of around +10 dB is likely to be a significant adverse impact... A difference of around +5 dB is likely to be an adverse impact...”</p> <p>2.2.3 NGETs misuse of the BS definition is not merely a “trivial slip of the pen”, as it markedly softens the criteria by implication and misrepresents the precautionary intent of BS 4142, potentially leading to an underestimation of the number and scale of significant impacts.</p>	<p>The omission of the word ‘around’ is a typographical error and should be included in the sentences. This omission has no material effect on the assessment of operational noise. The extract of BS4142 (2014+A1:2019) quoted by SEAS in section 2.2.2 is itself incorrect and is also incomplete. For the avoidance of doubt, and because it is important in the Applicant’s responses later in this table, the correct and full wording is:</p> <p><i>“b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.</i></p> <p><i>c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.”</i></p>	<p>The full wording from BS 4142 is given in the Rupert Taylor Ltd report attached to the SEAS representation.</p>
<p>2.3 Incomplete Frequency Modelling and Attenuation Inaccuracy</p>		

2.3.1 Appendix 2.9.D or APP 138 Table 1.4 p9 lists A-weighted sound power levels for six converter transformers but omits the octave band frequency content (APP-138, p. 9). This is critical because transformer noise is dominantly tonal at 100 Hz & 200Hz (ie harmonics of the base AC frequency of 50Hz), but not necessarily across the wider frequency spectrum.

2.3.2 The authors claim use of ISO 9613-2:2024 for propagation modelling. This standard allows substitution of 500 Hz attenuation values, only if no spectral data are available. Without stating the actual frequency used, the ES may default to 500 Hz, thereby producing an optimistically low noise prediction.

2.3.3 "...shifting the frequency of the transformer from 100Hz to 500Hz results in an over-optimistic prediction..."

(p3 Noise & Vibration Expert Report by Rupert Taylor Ltd.)

2.3.4 This potential modelling error may have significant implications for realworld intrusiveness.

Octave band data was not provided for the transformers due to their potential for variation in spectral content between different transformers, particularly, as suggested at the 100 Hz frequency. Transformers were modelled with all sound power assumed to be at 100 Hz a worst-case, and not at 500 Hz. In practice, the acoustic energy at 100 Hz would be expected to be in the order of 10 dB lower, with the difference spread to higher frequencies.

Higher frequencies will be subject to greater attenuation by an acoustic enclosure than occurs at 100Hz, tending to increase the prominence of the 100Hz content in the spectrum

2.4 Room Resonance and Indoor Noise Impacts

Re: 2.4.1 - The assessment has been undertaken in accordance with appropriate guidance; namely with BS 4142:2019+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’ (BS 4142), as stated in Overarching National Policy Statement for Energy (EN-1), and National Policy Statement for Electricity Networks Infrastructure (EN-5).

2.4.1 The assessment assumes a 15 dB reduction between outdoor and indoor levels to justify NGET dismissing night-time impacts based on indoor thresholds (APP-138, paragraph1.4.20). However, this assumption:

- Is based on road traffic noise — not transformer noise,

With regards to the first bullet point, road traffic noise contains a range of frequencies, including those lower than 100 Hz (a peak around the 63 Hz octave band is usually observed). Reasonable worst-case assumptions have been considered in the assessment, including the assumption that sound from transformers is wholly at 100 Hz. In practice, acoustic energy at this frequency would be expected to be lower, with the difference spread to higher frequencies. Additionally, not all proposed plant items are tonal, with several, such as cooling plant, being broadband in nature. The 15 dB assumption (from BS 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS 8233)) is therefore not unreasonable. Additionally, there is a large margin between the predicted external noise level and the guidance values. The outcome of the assessment is therefore not dependant on the strict achievement of a 15 dB reduction through a partially open window (it is further noted that with closed windows, internal sound levels would be even lower). Internal noise levels are therefore not likely to lead to significant effects.

• Fails to account for potential room resonance at 100 Hz, which can lead to negative attenuation, i.e. the transformer sound actually being louder indoors than outdoors,

• Ignores constructive interference occurring between multiple transformers, which can lead to the aggregate SPL being higher than the sound level of each individual transformer. This issue would be further reinforced if there were more converter stations sited adjacent to the proposed Sea Link location e.g. for Lion Link and Sea Link 2.

2.4.2 APP-138 Table 1.8 shows rating levels exceeding background by up to 10 dB at R_5764 and up to 8 dB at R_14222. With proper use of “around” from BS 4142 and the resonance considerations above, both these receptors may experience significant adverse impacts, not “Small to Large ” or “Small to medium”.

With regards to the second bullet point, this is not a material consideration, with the assessment considering external noise level in accordance with applicable guidance. Additionally, as per the previous point, reasonable worst-case assumptions have been considered in the assessment, including the assumption that sound from transformers is wholly at 100 Hz. In practice, the acoustic energy at 100 Hz would be expected to be in the order of 10 dB lower, with the difference spread to higher frequencies. Room modes are not a function of the source, but are a function of the room’s dimensions. As such, a 100 Hz source frequency is not a direct indication that room modes are likely. Additionally, there is a large margin between the predicted external noise level and the guidance values. Internal room modes are therefore not likely to lead to significant effects.

With regards to the third bullet point, similar principles apply to the points above. The assessment assumes that sound from transformers is wholly at 100 Hz. In practice, the acoustic energy at 100 Hz would be expected to be in the order of 10 dB lower, with the difference spread to higher frequencies. The range of maxima and minima due to constructive and destructive interference would reduce at higher frequencies. The highest increase in level due to constructive interference would be 3 dB, compared to standard logarithmic addition, assuming all the energy is exclusively at one frequency. However, when considering the range of frequencies, and considering that the 100 Hz value would be significantly lower than assumed from the transformers themselves, the actual increase in sound level due to constructive interference would be negligible (<1dB), even at a worst case. Additionally, not all proposed plant items are tonal, with several, such as cooling plant, being broadband in nature. Constructive interference occurring between multiple transformers is therefore not likely to lead to significant effects.

Re: 2.4.2 – Table 1.8 is stating the magnitude of impact, not the significance. The initial consideration of magnitude of impact is based on the criteria stated in Table 1.1, prior to the consideration of context. The magnitude of impact is then determined following this initial comparison with the background sound level, taking into account context. Significance of effect is considered taking account of the magnitude of impact and the sensitivity of the receptor. Given the small magnitude of impact at residential NSR, accounting for context in line with the requirements of BS 4142, the effect of operational noise from the proposed Saxmundham Converter station is deemed to be not significant.

Room modes are a function of both the source and the receiving room. BS4142:2014+A1:2019 states "B.2.2Good practice guidelines: sources of sound B.2.2.1Spectral content (broadband and tonal sound) •Establish whether standing waves/interference patterns are present by considering the nature of the source and the influence of any nearby sound reflecting surfaces. This can be carried out subjectively by listening in several places around the measurement location, or by measuring any change in sound pressure levels with a sound level meter at different locations in the immediate locality when traversing the measurement location. •If standing waves are present and cannot be avoided, take a spatial average, either by measuring at several fixed locations or by slowly moving the microphone around the measurement location, whilst continually measuring sound level. •Gauge whether uncertainty could be significant when measuring sound at low and high frequency regions, e.g. below approximately 125 Hz or above 4 kHz respectively.

11.7 of the decision letters relating to East Anglia One North and East Anglia Two said "The ExA concluded [ER 13.2.115] that interference could occur and noted that the Applicant is relying on concerns about constructive interference being adequately considered and capable of satisfactory mitigation at detailed design stage.". However, it was possible to rely on satisfactory mitigation at the design stage because there were explicit noise limits in the DCO.

The Secretary of State's decision letter stated that "The ExA noted the concerns expressed by the local community and that the Proposed Development may have adverse noise impacts, particularly during operation, on receptors close to the substation infrastructure at Friston. These operational impacts may cause permanent harm and are therefore of medium significance, weighing negatively in the planning balance. The Secretary of State agrees with the ExA's conclusions on Noise and Vibration.

	<p>4.1.2 However, Table 9.23 (APP-056, p. 45) then applies a uniform 10 dB mitigation factor to all receptors — without demonstrating the feasibility of achieving such a reduction at each location, relying on BPM.</p>	<p>An attenuation of 10 dB is considered a reasonable assumption based for readily achievable mitigation based on the potential for screening, alternative construction methods, site layout, and orientation. These assumptions are detailed in Table 9.22 of Application Document 6.2.2.9 Part 2 Suffolk Chapter 9 Noise and Vibration [APP-056]. With the application of this reasonable assumption, it was determined that significant adverse effects can readily be avoided at all ‘hot-spot’ locations (noting that a reduction much lower than 10 dB was required to avoid significant effects at most locations). Additionally, should in practice (see paragraph below regarding further detailed assessments by the contractor) it not be feasible to reduce construction noise levels to below the threshold for potential significant effects, temporal restrictions would also form part of the mitigation strategy such that significant adverse do not occur.</p> <p>There are no statutory noise limits for construction noise or vibration. However, the Contractors will avoid significant adverse effects as defined in the ES, through the use of BPM. Significant adverse effects occur due to a combination of noise levels and duration (i.e. the noise level would be required to be above a certain level for a certain duration to be significant). The Contractor(s) would therefore consider both noise level reduction and potential temporal restrictions, in areas where noise level exceedance may occur, as part of BPM.</p>	<p>If it be not feasible to reduce construction noise levels to below the threshold for potential significant effects and temporal restrictions are required, this will double the length of the programme for the construction activities concerned for each 3 dB of shortfall in noise reduction. This effect has not been considered.</p> <p>The Hinkley Point C DCO (DCOs are statutory instruments) contains explicit construction noise limits. These are stricter than the Sea Link SOAEL values used because the value of T in LAeq,T is 1 hour whereas the Sea Link T is the whole assessment period (12 hours day 8 hours night). The Hinkley evening LAeq,T is numerically 5 dB higher before allowing for the different value of T.</p> <p>Construction noise</p> <p>(1) As determined at the façade of any dwelling, lawfully in existence at the date on which this Order is made, outside of Work No. 1A, the level of noise emitted from the site during the construction of Work No. 1A, including the removal of temporary construction development and landscape restoration works, 1B, 1C, 2A to 2H and TJ0 to TJ3 shall not exceed the following levels—</p> <p>(a) Monday to Saturday—</p> <p>(i) 07.00 to 19.00: 65 dB LAeq, 1hour;</p> <p>(ii) 19.00 to 23.00: 60 dB LAeq, 1hour; and</p> <p>(iii) 23.00 to 07:00: 45 dB LAeq, 1hour, and 65 dB LAmix;</p> <p>(b) Sundays and public holidays—</p> <p>(i) 07.00 to 19.00: 60 dB LAeq, 1hour;</p> <p>(ii) 19.00 to 23.00: 55 dB LAeq, 1hour; and</p> <p>(iii) 23.00 to 07:00: 45 dB LAeq, 1hour, and 65 dB LAmix.</p> <p>(2) The noise level restriction referred to in paragraph (1)(a)(i) shall apply except for specific, short duration construction or demolition activities during which an increased noise threshold of 75 dB LAeq, 1hour shall apply. A scheme for notifying local residents shall be submitted to and approved by West Somerset District Council before the increased noise threshold is applied. Notice of the application and duration of the increased threshold shall be given to West Somerset District Council and to local residents, in accordance with the approved scheme, at least 48 hours before the increased threshold is applied. The number and duration of occasions on which the increased noise threshold is applied shall be limited to those approved by West Somerset district Council.</p> <p>(3) Monitoring of the noise levels during construction of the development shall be carried out pursuant to the details approved pursuant to requirement MS11.</p>
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Conclusion

Having reviewed the Applicant's responses, SEAS concludes that the substantive shortcomings identified in its Relevant Representation remain unresolved. The Applicant has not demonstrated that noise impacts have been assessed using robust or representative baseline data, nor that the assessment meets the evidential requirements of national policy.

Key deficiencies remain in relation to:

- **Lack of Enforceable Noise Limits:**
- **Reliance on Non-Binding Commitments:**
- **Dismissal of Low-Frequency Effects: -**
- **Acknowledgment of Error Without Full Correction:**
- **Unverified Mitigation:**