The Great Grid Upgrade

Sea Link

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Volume 6: Environmental Statement

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Part 2 Suffolk
Chapter 9
Noise & Vibration

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Date	Issue	Status	Description / Changes
March 2025	A	Final	For DCO submission
September 2025	B	Final	Update to reflect S89(3) Procedural Decision from the Examining Authority

9. Noise & Vibration

9.1 Introduction

9.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant noise and vibration effects that could result from the Proposed Project (as described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**).

9.1.2 Noise and vibration effects associated with the Suffolk Onshore Scheme relate to the construction and operation of the Proposed Project potentially affecting noise sensitive receptors (NSR). Potential noise and vibration effects during the construction phase include those from construction activities and construction traffic. Potential operational noise effects during the operational phase include those from the proposed converter station and substation. Potential noise and vibration effects during the decommissioning phase include those from decommissioning activities and associated traffic.

9.1.3 The Order Limits, which illustrate the boundary of the Proposed Project, are illustrated on **Application Document 2.2.1 Overall Location Plan** and the Suffolk Onshore Scheme Boundary is illustrated on **Application Document 2.2.2 Suffolk Location Plan**.

9.1.4 This chapter should be read in conjunction with:

- **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**;
- **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**;
- **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**;
- **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation**;
- **Application Document 6.2.2.2 Part 2 Suffolk Chapter 2 Ecology and Biodiversity**;
- **Application Document 6.2.2.3 Part 2 Suffolk Chapter 3 Cultural Heritage**;
- **Application Document 6.2.2.7 Part 2 Suffolk Chapter 7 Traffic and Transport**;
- **Application Document 6.2.2.10 Part 2 Suffolk Chapter 10 Socio-economics, Reaction and Tourism**; and
- **Application Document 6.2.2.11 Part 2 Suffolk Chapter 11 Health and Wellbeing**.

9.1.5 This chapter is supported by the following figures:

- **Application Document 6.4.2.9 Noise and Vibration**.

9.1.6 This chapter is supported by the following appendices:

- **Application Document 6.3.2.9.A Appendix 2.9.A Suffolk Noise Survey Data**;
- **Application Document 6.3.2.9.B Appendix 2.9.B Suffolk Construction Noise and Vibration Data**;
- **Application Document 6.3.2.9.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**;
- **Application Document 6.3.2.9.D Appendix 2.9.D Suffolk Operational Noise Assessment**; and
- **Application Document 6.3.2.9.E Appendix 2.9.E Friston Substation and Overhead Line Operational Noise Information (Informative)**.

9.1.7 This chapter is supported by the following application documents:

- **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)**;
- **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**;
- **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**; and
- **Application Document 7.5.8.1 Outline Construction Noise and Vibration Management Plan-Suffolk (OCNVMP)**.

9.2 Regulatory and Planning Context

9.2.1 This section sets out the legislation and planning policy that is relevant to the assessment of noise and vibration effects. A full review of compliance with relevant national and local planning policy is provided within the **Application Document 7.1 Planning Statement** submitted as part of the application for Development Consent.

9.2.2 Policy generally seeks to minimise noise and vibration effects from development and to avoid significant adverse effects. This applies particularly to construction and operational noise and vibration.

Legislation

The Control of Pollution Act 1974

9.2.3 The Control of Pollution Act 1974 (CoPA) (HM Goverment, 1974) sets out the framework for the legislative control of construction noise and vibration on any given site. It also sets out the principle of 'best practicable means' (BPM) (as defined in Section 72 of the Act) and how that should be applied to construction activity noise. The Act refers to approved Codes of Practice, which include British Standards 5228 Part 1 (BSI, 2014) and Part 2 (BSI, 2014), as being relevant for the purposes of determining the BPM.

9.2.4 Section 61 of the Act states that consent may be sought from the relevant local authorities prior to the construction works commencing. If prior consent is sought, the relevant local authorities will need to be provided with information about the proposed construction works and how construction noise will be managed, including the use of BPM.

Environmental Protection Act 1990

9.2.5 Under Part III of the Environmental Protection Act 1990 (HM Government, 1990) as amended by the Noise and Statutory Nuisance Act 1993, local authorities have a duty to investigate noise complaints relating to a variety of sources such as construction noise but excluding road traffic noise. If the local authority is satisfied that the noise amounts to a statutory nuisance it shall serve an Abatement Notice which may require that the noise be stopped altogether or limited to certain times.

National Policy

National Policy Statements

9.2.6 National Policy Statements (NPS) set out the primary policy tests against which the application for a Development Consent Order (DCO) for the Proposed Project will be considered. Table 9.1 and Table 9.2 below provides details of the elements of NPS for Energy (EN-1) (Department for Energy Security & Net Zero, 2023) and NPS for Electricity Networks Infrastructure (EN-5) (Department for Energy Security & Climate Change, 2023) that are relevant to this chapter. NPS EN-3 Renewable Energy Infrastructure has relevance to the Proposed Project, but only in respect of the offshore elements. As such it has no relevance to the assessment presented in this chapter.

Table 9.1 NPS EN-1 requirements relevant to noise and vibration

NPS EN-1 section	Where this is covered in the ES
5.12.1 *"Excessive noise can have wide-ranging impacts on the quality of human life and health such as annoyance, sleep disturbance, cardiovascular disease and mental ill-health. It can also have an impact on the environment and the use and enjoyment of areas of value such as quiet places and areas with high landscape quality."*	The potential effects of noise and vibration during both construction and operation are considered in this chapter of the ES.
5.12.2 *"The Government's policy on noise is set out in the Noise Policy Statement for England. It promotes good health and good quality of life through effective noise management. Similar considerations apply to vibration, which can also cause damage to buildings. In this section, in line with current legislation, references to "noise" below apply equally to assessment of impacts of vibration."*	The potential effects of noise and vibration during both construction and operation are considered in this chapter of the ES. The assessments consider the implications of the Noise Policy Statement for England (NPSE) (Defra, 2010).
5.12.6 *"Where noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment:* *a description of the noise generating aspects of the development proposal leading to noise impacts, including the identification of any*	The various requirements of this section are provided as follows: • A description of the noise generating elements of the Project are provided in Section 9.9 of this chapter, and associated appendices

NPS EN-1 section	Where this is covered in the ES
distinctive tonal characteristics, if the noise is impulsive, whether the noise contains particular high or low frequency content or any temporal characteristics of the noise; *identification of noise sensitive receptors and noise sensitive areas that may be affected; the characteristics of the existing noise environment;* *a prediction of how the noise environment will change with the proposed development;* *in the shorter term such as during the construction period;* *in the longer term during the operating life of the infrastructure;* *at particular times of the day, evening and night (and weekends) as appropriate, and at different times of the year.* *an assessment of the effect of predicted changes in the noise environment on any noise sensitive receptors, including an assessment of any likely impact on health and quality of life / well-being where appropriate, particularly among those disadvantaged by other factors who are often disproportionately affected by noise-sensitive areas;* *if likely to cause disturbance, an assessment of the effect of underwater or subterranean noise;* *all reasonable steps taken to mitigate and minimise potential adverse effects on health and quality of life."*	**Application Document 6.3.2.9.B Appendix 2.9.B Suffolk Construction Noise and Vibration Data**, **Application Document 6.3.2.9.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**, and **Application Document 6.3.2.9.D Appendix 2.9.A Suffolk Operational Noise Assessment**. • Noise sensitive receptors and areas are described in Section 9.7 and are shown in **Application Document 6.4.2.9.1 Suffolk Noise and Vibration Baseline**. • Predictions of how the noise environment will change in the short term (during construction period) and during particular times of the day, evening, and night, are provided in Section 9.9 of this chapter, and associated appendices **Application Document 6.4.2.9.2 Suffolk Construction Noise Assessment Outputs (Daytime)**, **Application Document 6.4.2.9.3 Suffolk Construction Noise Assessment Outputs (Night-time)**, **Application Document 6.4.2.9.4 Suffolk Construction Vibration Assessment Outputs**, and **Application Document 6.3.2.9.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**. • Predictions of how the noise environment will change in the long term (during operational period) and during particular times of the day, evening, and night are provided in Section 9.9 of this

NPS EN-1 section	Where this is covered in the ES
	chapter, and associated appendices **Application Document 6.3.2.9.D Appendix 2.9.A Suffolk Operational Suffolk Assessment**. • The assessment of predicted changes in the noise environment on noise sensitive receptors are provided in Section 9.9 of this chapter, and associated appendices **Application Document 6.4.2.9.2 Suffolk Construction Noise Assessment Outputs (Daytime)**, **Application Document 6.4.2.9.3 Suffolk Construction Noise Assessment Outputs (Night-time)**, **Application Document 6.4.2.9.4 Suffolk Construction Vibration Assessment Outputs**, and **Application Document 6.3.2.9.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**, and **Application Document 6.3.2.9.D Appendix 2.9.A Suffolk Operational Noise Assessment**. • The effect of underwater and subterranean noise are outside the scope of this assessment. • Outline mitigation measures for construction and operational effects are detailed in Sections 9.8 and 9.10 of this chapter, and **Application Document 6.3.2.9.D Appendix 2.9.A Suffolk Operational Noise Assessment**.
5.12.7 *"The nature and extent of the noise assessment should be proportionate to the likely noise impact."*	The assessments presented in this chapter are proportionate to the likely impact.

NPS EN-1 section	Where this is covered in the ES
5.12.8 *"Applicants should consider the noise impact of ancillary activities associated with the development, such as increased road and rail traffic movements, or other forms of transportation."*	An assessment of potential noise and vibration impacts from construction traffic is presented in this chapter.
5.12.9 *"(part) Operational noise, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance. Further information on assessment of particular noise sources may be contained in the technology specific NPSs. In particular, for renewables (EN-3) and electricity networks (EN-5) there is assessment guidance for specific features of those technologies. For the prediction, assessment and management of construction noise, reference should be made to any relevant British Standards and other guidance which also give examples of mitigation strategies."*	The assessment of operational is provided in Section 9.9 of this chapter, and associated appendices **Application Document 6.3.2.9.D Appendix 2.9.A Suffolk Operational Noise Assessment** and **Application Document 6.3.2.9.E Appendix 2.9.E Friston Substation and Overhead Line Operational Noise Information (Informative)**. The assessment has been conducted with reference to relevant British Standards, including British Standard 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound (BSI, 2019), Association of Noise Consultants BS 4142:2014+A1:2019 Technical Note, 2020 (ANC, 2020), British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings (BSI, 2014), World Health Organisation Guidelines for Community Noise, 1999 (WHO, 1999), and World Health Organisation Night noise guidelines for Europe, 2009 (WHO, 2009).
5.12.10 *"Some noise impacts will be controlled through environmental permits and parallel tracking is encouraged where noise impacts determined by an environmental permit interface with planning issues (i.e. physical design and location of development). The applicant should consult the EA and/or the SNCB, and other relevant bodies, such the MMO or NRW, as necessary, and in particular regarding assessment of noise on protected species or other wildlife. The results of any noise surveys and predictions may inform the ecological assessment. The seasonality of potentially affected species in nearby sites may also need to be considered."*	An assessment of potential impacts on ecological receptors is provided in **Application Document 6.2.2.2 Part 2 Suffolk Chapter 2 Ecology and Biodiversity**. Consultation with relevant bodies is described in Section 2.3 of that document.
5.12.16 *"(part) A development must be undertaken in accordance with statutory requirements for noise. Due regard must be given to the relevant sections of the Noise Policy Statement for England, the NPPF, and the*	The assessments presented in this chapter consider the relevant sections of the NPSE, and the National Planning Policy Framework (NPPF) (Ministry for

NPS EN-1 section	Where this is covered in the ES
government's associated planning guidance on noise."	Housing, Communities & Local Government, 2024).

Table 9.2 NPS EN-5 requirements relevant to noise and vibration

NPS EN-5 section	Where this is covered in the ES
2.9.26 *"All high voltage transmission lines have the potential to generate noise under certain conditions."*	Operational noise from overhead lines is scoped out of the ES.
2.9.39 *"For the assessment of noise from substations, standard methods of assessment and interpretation using the principles of the relevant British Standards are satisfactory."*	An assessment of operational noise from proposed substation is provided in **Application Document 6.3.2.9.D Appendix 2.9.D Suffolk Operational Noise Assessment** and Section 9.9 of this chapter. This assessment uses the principles of the relevant British Standards (BS 4142).
2.9.40 *"For the assessment of noise from overhead lines, the Applicant must use an appropriate method to determine the sound level produced by the line in both dry and wet weather conditions, in addition to assessing the impact on noise-sensitive receptors."*	Operational noise from overhead lines is scoped out of the ES.
2.9.41 *"For instance, the Applicant may use an appropriate noise modelling tool or tools for the prediction of overhead line noise and its propagation over distance, such as an ISO 9613-2 or Technical Report TR(T)94."*	Operational noise from overhead lines is scoped out of the ES.
2.9.42 *"When assessing the impact of noise generated by overhead lines in wet weather relative to existing background sound levels, the Applicant should consider the effect of varying background sound levels due to rainfall."*	Operational noise from overhead lines is scoped out of the ES.
2.9.43 *"The Secretary of State is likely to regard it as acceptable for the Applicant to use a methodology that demonstrably addresses these criteria."*	Operational noise from overhead lines is scoped out of the ES.
2.10.9 "*Applicants must consider the following measures:* • *the positioning of lines to help mitigate noise;* • *ensuring that the appropriately sized conductor arrangement is used to minimise potential noise;*	Operational noise from overhead lines is scoped out of the ES.

NPS EN-5 section	Where this is covered in the ES
• *quality assurance through manufacturing and transportation to avoid damage to overhead line conductors which can increase potential noise effects;* • *ensuring that conductors are kept clean and free of surface contaminants during stringing/installation; and* • *the selection of the quietest cost-effective plants."*	
2.10.10 *"In addition, the ES should include information on planned maintenance arrangements. Where detail is not included, the Secretary of State should consider stipulating appropriate maintenance arrangements by way of requirements attached to any grant of development consent."*	Details of maintenance arrangements are provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. With regards to noise and vibration, it is assumed that effects are similar or no worse than those experienced during construction, the effects of which are assessed in Section 9.9 of this chapter.

National Planning Policy Framework

9.2.7 The NPPF as revised in December 2024 (Ministry for Housing, Communities & Local Government, 2024) sets out national planning policies that reflect priorities of the Government for operation of the planning system and the economic, social, and environmental aspects of the development and use of land. The NPPF has a strong emphasis on sustainable development, with a presumption in favour of such development. The NPPF has the potential to be considered important and relevant to the Secretary of State (SoS) consideration of the Proposed Project.

9.2.8 Table 9.3 below provides details of the elements of the NPPF that are relevant to this chapter, and how and where they are covered in the ES.

Table 9.3 NPPF requirements relevant to noise and vibration

NPPF section	Where this is covered in the ES
Paragraph 187 "… 'Planning policies and decisions should contribute to and enhance the natural environment by: *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account*	An assessment of potential noise and vibration impacts is presented in Section 9.9 of this chapter.

NPPF section	Where this is covered in the ES
relevant information such as river basin management plans.'"	
Paragraph 198 "…Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: *a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;* *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*	An assessment of potential noise and vibration impacts from construction traffic is presented in Section 9.9 of this chapter. Embedded mitigation measures to mitigate and reduce potential adverse impacts resulting from noise associated with the Proposed Project are detailed in Section 9.8 of this chapter. Additional mitigation measures are detailed in Section 9.10 of this chapter.

Local Planning Policy

9.2.9 The Suffolk Onshore Scheme (refer to **Application Document 2.2.2 Suffolk Location Plan**) lies within the jurisdiction of Suffolk County Council and East Suffolk Council. However, noise and vibration fall under the jurisdiction of the local authority, East Suffolk Council. Local planning guidance that is relevant to a study of noise and vibration and has informed the assessment of preliminary effects in this chapter is as follows:

- Suffolk Coastal Local Plan, adopted in September 2020 (East Suffolk Council, 2020); and
- Waveney Local Plan, adopted in March 2019 (East Suffolk Council, 2019) (which covers the former Suffolk Coastal and Waveney Districts).

Local Plans

9.2.10 Local planning policy for East Suffolk Council consists of two parts; the Suffolk Coastal Local Plan (East Suffolk Council, 2020) and the Waveney Local Plan (East Suffolk Council, 2019) The Suffolk Onshore Scheme lies within the boundary of the Suffolk Coastal Local Plan (adopted September 2020). Local Plan policies that are relevant to noise and vibration are detailed in Table 9.4.

Table 9.4 Local planning policies relevant to noise and vibration – Suffolk Coastal Local Plan

Suffolk Coastal Local Plan - Policy	Where this is covered in the ES
10.3: Environmental Quality *The objective of policy 10.3 is to ensure that potential development will not adversely affect existing sensitive locations due to various types of pollution, including noise and vibration.*	The potential effects of noise and vibration during both construction and operation are considered in Section 9.9 of this chapter of the ES. Embedded mitigation measures to mitigate and reduce potential adverse impacts resulting from noise associated with the Proposed Project are detailed in Section 9.8 of this chapter. Additional mitigation measures are detailed in Section 9.10 of this chapter.

9.3 Scoping Opinion and Consultation

Scoping

9.3.1 A Scoping Report for the Proposed Project was issued to the Planning Inspectorate (PINS) on 24 October 2022 (**Application Document 6.14 Environmental Scoping Report 2022**) and a Scoping Opinion was received from PINS, on behalf of the SoS, on 1 December 2022 (**Application Document 6.15 Scoping Opinion**). Table 9.5 sets out the comments raised in the Scoping Opinion and how these have been addressed in this ES. The Scoping Opinion takes account of responses from prescribed consultees as appropriate. **Application Document 6.3.1.6.A Appendix 1.6.A Responses to Scoping Opinion** provides responses to the comments made by the prescribed consultees at the scoping stage and how each comment has been considered.

Table 9.5 Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
4.9.1	*[Operational vibration]* The Inspectorate does not agree to scope this matter out given the uncertainties regarding the chosen location of the converter station and the proximity to sensitive receptors. The Scoping Report provides limited information regarding anticipated operational vibration levels. The ES should provide an assessment of operational vibration or the information demonstrating agreement with relevant stakeholders and the absence of likely significant effects.	Information relating to the proposed location and indicative design of the Saxmundham Converter Station and Friston Substation is now available, as detailed in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. There are no proposed plant items where vibration levels would be deemed significant even immediately next to the

ID	Inspectorate's comments	Response
		plant. There is a significant distance between the proposed substation and converter station, and nearby NSR; namely Wood Farm approximately 260m to the northwest of the proposed Saxmundham Converter Station. Adverse and significant adverse effects from operational vibration are therefore highly unlikely and are scoped out of further assessment. This has been agreed with the environmental health department of East Suffolk Council.
4.9.2	*[Operational road traffic noise and vibration – all options]* The Inspectorate agrees to scope this matter out on the basis that operational traffic movements are likely to be infrequent and unlikely to give rise to significant effects.	Operational traffic is scoped out of further assessment.
4.9.3	*[Construction traffic vibration]* Construction vehicle routes are currently unknown and therefore so is the distance to sensitive receptors. In addition, the number and type of vehicles have not yet been confirmed. In the absence of this detail, the Inspectorate does not agree to scope out construction traffic vibration for the construction phase at this time.	Construction traffic vibration is considered in **Application Document 6.3.2.9.B Appendix 2.9.B Suffolk Construction Noise and Vibration Data** and Section 9.9 of this chapter.
4.9.4	*[Switchgear operational noise]* This matter is proposed to be scoped out on the basis that switchgear noise emissions would be impulsive in character and operation would be infrequent. It is further stated that auxiliary plant comprising standby generators and air compressors would contribute to the broadband noise, however, these would not run continuously and would be housed and used as emergency back-up only. The Inspectorate agrees that this matter can be scoped out of further assessment. The ES should contain relevant engineering specifications to demonstrate that switchgear operation is unlikely to result in significant effects and should demonstrate that consultation has been undertaken with the relevant consultation bodies.	An indicative assessment of switchgear and auxiliary plant noise based on engineering specifications is provided in **Application Document 6.3.2.9.E Appendix 2.9.E Friston Substation and Overhead Line Operational Noise Information (Informative)**.

ID	Inspectorate's comments	Response
4.9.5	*[Operational noise and vibration from underground cables (operation)]* The Inspectorate agrees that operational noise and vibration from underground cables is unlikely to result in significant effects and agrees that this matter can be scoped out of the ES.	Operational noise and vibration from underground cables is scoped out of further assessment.
4.9.6	*[Overhead line noise (operation)]* The Inspectorate agrees to scope out the operational effects of overhead line noise on the basis that the nearest noise sensitive receptor would be approximately 500 m away from the closest potential proposed overhead line. Based on the nature of the noise emissions and the predicted distance from receptors, the Inspectorate considers that this matter may be scoped out.	Operational noise and vibration from overhead lines is scoped out of further assessment.
4.9.7	*[Mitigation measures]* The Scoping Report refers to noise mitigation measures which include screening and enclosures. The ES should address the potential adverse effects of mitigation measures in the relevant aspect chapters of the ES (e.g., Landscape and Visual) where significant effects are likely to occur.	Landscape and visual effects due to potential noise mitigation measures are considered in **Application Document 6.2.2.1 Part 2 Suffolk Chapter 1 Landscape and Visual**. Effects from potential noise mitigation measures on other disciplines are not expected.

Statutory Consultation

9.3.2 Statutory consultation for the Proposed Project took place between 24 October and 18 December 2023. A further Targeted Consultation exercise on the main changes to the Proposed Project introduced after the 2023 statutory consultation, was undertaken between 8 July and 11 August 2024. In addition, a project update and a local engagement exercise took place between 22 November 2024 and 12 January 2025, focusing on design amendments made following Targeted Consultation. A summary of relevant feedback received during consultation relating to noise and vibration is provided below. Further details on how consultation responses have informed the assessment are provided in **Application Document 5.1 Consultation Report** and **Application Document 5.1.9 Appendix H Summary 2023 Response** (an appendix to the Consultation Report).

9.3.3 The consultation feedback, including consideration of construction noise and vibration and operational noise, has been considered in the chapter as required.

9.3.4 The key points raised by stakeholders during consultation with regards to noise and vibration related to the control of construction noise and vibration, including potential cumulative effects with other projects, and the control of operational noise from the

proposed Saxmundham Converter Station and Friston Substation, including potential cumulative effects with other projects.

Further Engagement

9.3.5 Three thematic meetings were held with representatives of Suffolk County Council and the environmental health department of East Suffolk Council, during which construction noise and vibration, construction traffic noise, and operational noise were discussed.

9.3.6 The key points raised during the meetings related to the control of construction noise and vibration, including potential cumulative effects with other projects, baseline noise survey methodology, and the assessment and control of operational noise from the proposed Saxmundham Converter Station and Friston Substation, including potential cumulative effects with other projects. No additional key NSR, requiring special consideration of their sensitivity, were identified in the Suffolk noise and vibration study area during engagement with the representatives of Suffolk County Council and East Suffolk Council, beyond those identified in the baseline study described in Section 9.7 of this chapter.

Summary of Scope of Assessment

9.3.7 This section details what aspects have been scoped in and scoped out of the assessment through the scoping process and consultation with stakeholders.

Aspects scoped into the assessment

9.3.8 The scope of this assessment covers temporary impacts from noise and vibration during the construction stage, including construction traffic noise and vibration, and the decommissioning phase.

9.3.9 The assessment considers operational noise from the proposed converter station.

9.3.10 Although potential operational noise from the Friston substation was originally proposed to be included in the scope of the ES (other than noise from switch gear and auxiliary plant, which was agreed to be scoped out – see Scoping Report and Scoping Opinion) it has since transpired that there are no other potential sources of noise proposed during normal operation (i.e. there are no proposed transformers or similar plant). As such, operational noise from the normal operation of the proposed Friston Substation is not considered further within the assessment.

Aspects scoped out of the assessment

9.3.11 Operational traffic noise and operational noise from underground cables have been scoped out of the assessment.

9.3.12 Operational noise for overhead lines and auxiliary equipment within the proposed Friston substation is scoped out of the ES. However, additional information has been provided within **Application Document 6.3.2.9.E Appendix 2.9.E Friston Substation and OHL Operational Noise Information (Informative)** at the request of East Suffolk Council.

9.4 Approach and Methodology

9.4.1 **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** sets out the overarching approach that has been used in developing the ES. This section describes the technical methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of effects and sets out the significance criteria that have been used for the noise and vibration assessment.

Guidance Specific to the Noise and Vibration Assessment

9.4.2 The noise and vibration assessment has been carried out in with reference to the following practice guidance documents:

- National Planning Policy Framework (NPPF) (Ministry for Housing, Communities & Local Government, 2024);
- Noise Policy Statement for England (NPSE) (Defra, 2010);
- Planning Practice Guidance for Noise (PPGN) (HM Government, 2019)
- British Standard 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise (BS 5228-1) (BSI, 2014)
- British Standard 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration (BS 5228-2) (BSI, 2014);
- Design Manual for Roads and Bridges LA 111 – Noise and Vibration (DMRB LA 111) (Highways England et al., 2020);
- Department for Transport (DoT) technical memorandum Calculation of Road Traffic Noise, 1988 (CRTN) (DoT, 1988);
- ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors (ISO 9613) (ISO, 2024);
- British Standard 4142:2014+A1:2019. Methods for rating and assessing industrial and commercial sound (BS 4142) (BSI, 2019);
- Association of Noise Consultants (ANC) BS 4142:2014+A1:2019 Technical Note, 2020 (ANC, 2020);
- British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS 8233) (BSI, 2014);
- British Standard 7445-1:2003 – Description and measurement of environmental noise – Part 1: Guide to quantities and procedures (BS 7445-1) (BSI, 2003);
- World Health Organisation (WHO) Guidelines for Community Noise, 1999 (GfCN) (WHO, 1999); and
- WHO Night noise guidelines for Europe, 2009 (NNG) (WHO, 2009).

Baseline Data Gathering and Forecasting Methods

Data sources

9.4.3 A baseline assessment has been informed by a desk study which has drawn on the following information sources:

- Defra strategic noise mapping (2017) (Defra, 2019);
- Ordnance Survey (OS) mapping;
- OS AddressBase Plus data;
- Baseline and construction traffic data; and
- noise survey data.

Noise survey methodology

9.4.4 The operational noise assessment has been informed by noise survey data obtained from a location representative of nearby NSR, as shown in **Application Document 6.4.2.9.1 Suffolk Noise and Vibration Baseline**. The noise survey was conducted in June and July 2023 in accordance with BS 7445-1 (BSI, 2003) and BS 4142 (BSI, 2019). The sound level meter measured a range of parameters including the following:

- $L_{Aeq,T}$ – The A-weighted equivalent continuous sound pressure level over the measurement period T, representative of the 'average' sound pressure level over a given period, in this case 15 minutes;
- $L_{A90,T}$ – The A-weighted noise level that is exceeded for 90% of the measurement period, and is usually regarded as a descriptor of the background noise level; and
- $L_{AFmax,T}$ –the maximum A-weighted noise level during the sample period, measured using a fast time weighting.

9.4.5 Broadband and 1/3 octave band values were measured for the above parameters.

9.4.6 The measurement periods and durations were appropriate to the measurement required, taking account of guidance from BS 4142. Microphones were fitted with windshields and the microphone was mounted between 1.3 m – 1.5 m from ground level. The measurement locations were free-field, at least 3.5 m from any reflective surfaces, other than the ground. Weather conditions were monitored during the survey, with periods of rain and wind speeds greater than 5 metres per second (m/s) excluded from the assessment.

9.4.7 The sound level meter was calibrated at the start and end of the survey period with no significant drift observed.

Assessment Criteria

Sensitivity of receptors

9.4.8 The sensitivity of NSR is determined partly on property type, for example residential properties are of a higher sensitivity than factories and offices.

9.4.9 Although all residential NSR are sensitive to noise and vibration, there are also cases where the sensitivity of an NSR may depend on the pre-existing noise climate. For

example, NSR within existing high noise areas (such as Noise Important Areas (NIA)) may be more sensitive to increases in noise than those outside NIA. Consideration would be given to such instances as part of the assessment of construction traffic noise impacts.

9.4.10 The sensitivity of residential NSR is factored into the assessment methodologies. However, additional consideration of sensitivity may be required in certain cases for non-residential NSR. The criteria used to determine the value and sensitivity of non-residential NSR specific to noise and vibration are set out in Table 9.6. These values are based on standard practice.

Table 9.6 Criteria for determining value/sensitivity – Non-residential NSR

Sensitivity/Value	Criteria
High	Schools and education premises, hospitals, clinics, care homes, places of worship, community centres, libraries, and dwellings within NIA (in relation to road traffic noise).
Medium	Areas primarily used for leisure activities including Public Rights of Way (PRoW), sports facilities and sites of historic or cultural importance, camp sites, hotels, gardens, and parks.
Low	Offices, cafes/bars with external areas.
Negligible	Industrial or retail premises.

Magnitude noise and vibration effects

9.4.11 The assessment of noise and vibration effects makes reference to 'lowest observed adverse effect levels' (LOAELs) and 'significant adverse effect levels' (SOAELs), as defined by the NPSE (Defra, 2010) and PPGN (HM Government, 2019). The NPSE states that:

"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times".

9.4.12 The LOAELs and SOAELs for the various source of noise and vibration are therefore defined with reference to applicable guidance documents.

Construction noise assessment criteria

9.4.13 Construction noise impacts have been assessed in accordance with BS 5228-1 (BSI, 2014) and with the guidance of DMRB LA 111 (Highways England et al., 2020). Note that although DMRB LA 111 was primarily developed for the assessment of highways schemes, it is generally recognised as suitable for the assessment of a wide range of infrastructure development.

9.4.14 Construction noise levels have been calculated at NSR for the various construction activities in accordance with the methodology described in Annex F of BS 5228-1 and compared against the assessment thresholds. The thresholds are set relative to the

lower noise thresholds (Category A) as detailed in Section E.3.2 of BS 5228-1 (the 'ABC' method). The Category A construction noise thresholds represent the lowest assessment criteria (typically used to assess impacts in rural areas) and are proposed to be used throughout the EIA as a worst-case.

9.4.15 The LOAEL and SOAEL are established in accordance with Table 9.7.

Table 9.7 Construction noise LOAEL and SOAEL

Time period	LOAEL	SOAEL
Weekdays 7:00am to 7:00pm, and Saturdays 7:00am to 1:00pm	50 dB $L_{Aeq,T}$	65 dB $L_{Aeq,T}$
Weekdays 7:00pm to 11:00pm, Saturdays 1:00pm to 11:00pm, and Sundays 7:00am to 11:00pm	50 dB $L_{Aeq,T}$	55 dB $L_{Aeq,T}$
Night-time 11:00pm to 7:00am	40 dB $L_{Aeq,T}$	45 dB $L_{Aeq,T}$

9.4.16 The magnitude of impact of construction noise would be determined against the criteria specified by DMRB LA 111, as detailed in Table 9.8.

Table 9.8 Magnitude of impact from construction noise

Magnitude	Construction noise level
Large	Above or equal to SOAEL +5 dB
Medium	Above or equal to SOAEL and below SOAEL +5 dB
Small	Above or equal to LOAEL and below SOAEL
Negligible	Below LOAEL

9.4.17 The assessment highlights NSR potentially experiencing significant adverse effects from construction noise, without mitigation. However, for the purposes of this assessment, specific mitigation measures, such as screening, are not included in the calculations (with the exception of certain fixed plant items, such as generators). This is so that construction noise 'hot-spots' can be highlighted and specific noise mitigation measures can be identified to avoid significant adverse effects. In practice best practicable means (BPM) would be employed for all construction activities to reduce the effects of construction noise.

Construction vibration assessment criteria

Construction vibration effects on people in buildings

9.4.18 Construction vibration impacts have been assessed in accordance with BS 5228-2 (BSI, 2014) and with the guidance of DMRB LA 111 (Highways England et al., 2020).

9.4.19 Construction vibration levels have been calculated at NSR for the various construction activities in accordance with the methodology described in Annex E of BS 5228-2 and compared against the assessment thresholds.

9.4.20 Construction vibration effect threshold levels, including applicable LOAEL and SOAEL, are presented in Table 9.9.

Table 9.9 Construction vibration effect levels

Vibration level mm/s PPV*	Effect
0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3	Vibration might be just perceptible in residential environments (LOAEL).
1.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents (SOAEL).
10	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments.

* millimetres per second peak particle velocity

9.4.21 The magnitude of impact of construction vibration have been determined against the criteria specified by DMRB LA 111 (Highways England et al., 2020), as detailed in Table 9.10.

Table 9.10 Magnitude of impact of construction vibration

Magnitude	Construction vibration level
Large	Above or equal to 10 mm/s PPV.
Medium	Above or equal to SOAEL and below 10 mm/s PPV.
Small	Above or equal to LOAEL and below SOAEL.
Negligible	Below LOAEL.

9.4.22 The assessment highlights NSR potentially experiencing significant adverse effects from construction vibration, without mitigation. However, for the purposes of this assessment, specific mitigation measures, such as the use of alternative methods, are not included in the assessment. This is so that construction vibration 'hot-spots' can be highlighted and specific noise mitigation measures can be identified to avoid significant adverse effects. In practice best practical means (BPM) would be employed for all construction activities to reduce the effects of construction vibration.

Construction vibration effects on structures and buildings

9.4.23 As above, construction vibration levels have been calculated and assessed in accordance with the methodologies described in BS 5228-2 (BSI, 2014).

9.4.24 In the case of potential structural damage an impact magnitude scale is not deemed appropriate. Rather, the assessment should consider whether there is a likelihood of potential damage or not. As such a fixed threshold has been used.

9.4.25 BS 5228-2 notes that the probability of damage tends towards zero at 12.5 mm/s PPV. Buildings and structures where the predicted vibration level is above or approaching this value will be highlighted such that measures can be put in place by the contractor to reduce and manage vibration levels. The specific threshold may be reviewed for specific structures as deemed appropriate.

Construction traffic noise assessment criteria

9.4.26 Noise from construction traffic on the public highway has been calculated in accordance with CRTN (DoT, 1988) and assessed against the criteria detailed in DMRB LA 111. The basic noise level (BNL) from roads within the construction traffic study area has been calculated in accordance with CRTN for the ‘do-nothing’ and ‘do-something’ scenarios during the construction period.

9.4.27 The calculated BNL values for the ‘do-minimum’ and ‘do-something’ scenarios have been compared to determine the magnitude of the impact in accordance with criteria specified by DMRB LA 111 as detailed in Table 9.11.

Table 9.11 Magnitude of impact from construction traffic noise

Magnitude	Increase in BNL of closest public road used for construction traffic (dB)
Large	Greater than or equal to 5.0.
Medium	Greater than or equal to 3.0 and less than 5.0.
Small	Greater than or equal to 1.0 and less than 3.0.
Negligible	Less than 1.0.

Magnitude of operational noise effects

9.4.28 Operational noise levels from the proposed Saxmundham Converter Station have been predicted at NSR based on indicative plant noise level data following the methodology described in ISO 9613 (ISO, 2024) and assessed in accordance with BS 4142 (BSI, 2019). The noise rating level has been compared to the background sound level to determine the magnitude of impact with reference to the criteria described by BS 4142 to provide an initial assessment. The magnitude of impact of operational noise is determined against the criteria detailed in Table 9.12.

Table 9.12 Magnitude of impact of operational noise

Magnitude	Comparison of sound rating level and background sound level
Large	Rating level > 10 dB above the background sound level.
Medium	Rating level between 5 and 9 dB above background sound level.
Small	Rating level between 0 and 4 dB above background sound level.
Negligible	Rating level below background sound level.

9.4.29 Although the above criteria will be used to assess the magnitude of impact, it is standard practice to aim for a sound rating level not to exceed the background sound level, such that the impact is 'low' (as defined in BS 4142), or negligible in terms of the impact magnitude definition defined in Table 9.12 above. Additionally, the local authority aim is for the rating level to be at least 5 dB below the background sound level, where feasible.

9.4.30 Consideration will also be taken of the context as defined in BS 4142 for the final determination of significance; in particular, absolute noise levels. Context will be considered taking account of the following guidance:

- BS 4142;
- WHO GfCM (WHO, 1999);
- WHO NNG (WHO, 2009);
- ANC Technical Note (ANC, 2020);
- BS 8233 (BSI, 2014); and
- PPGN (HM Government, 2019).

Significance of effects

9.4.31 At residential NSR, large and medium magnitude effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant.

9.4.32 At non-residential NSR the significance of effect is based on the significance matrix provided in Table 9.13.

Table 9.13 Significance matrix at non-residential NSR

		NSR sensitivity			
		High	**Medium**	**Low**	**Negligible**
Impact magnitude	**Large**	Major	Major	Moderate	Minor
	Medium	Moderate	Moderate	Minor	Negligible
	Small	Moderate	Minor	Negligible	Negligible

	Negligible	Minor	Negligible	Negligible	Negligible

9.4.33 Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement would also be applied in reaching conclusions as to the significance of effects at specific non-residential NSR.

9.4.34 With regards to construction noise and vibration, significant effects are deemed to occur where a medium or large magnitude impact occurs for a period of at least ten days in any 15 consecutive days or 40 days in any consecutive six-month period, based on guidance from BS 5228-1 (BSI, 2014) and DMRB LA 111 (Highways England et al., 2020).

Assumptions and Limitations

9.4.35 All assessments are based on current design information. It is assumed that third party data is accurate.

9.4.36 Further detailed assessments of construction noise and vibration impacts will be undertaken by the contractor and, where necessary, specific mitigation measures will be determined and implemented based on their assessment.

9.4.37 Further detailed assessments of operational noise impacts will be conducted by National Grid and/or the developer of the substation and converter station, and specific mitigation measures will be determined and implemented, where necessary, based on the results of their assessment. However, it is not anticipated that effects would be of greater significance than those assessed and reported within this chapter.

9.5 Basis of Assessment

9.5.1 This section sets out the assumptions that have been made in respect of design flexibility maintained within the Proposed Project and the consideration that has been given to alternative scenarios and the sensitivity of the assessment to changes in the construction commencement year.

9.5.2 Details of the available flexibility and assessment scenarios are presented in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project** and **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**.

Flexibility Assumptions

9.5.3 The environmental assessments have been undertaken based on the description of the Proposed Project provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. To take account of the flexibility allowed in the Proposed Project, consideration has been given to the potential for effects to be of greater or different significance should any of the permanent or temporary infrastructure elements be moved within the Limits of Deviation (LoD) or Order Limits.

9.5.4 The assumptions made regarding the use of flexibility for the main assessment are set out in Table 9.14 below.

Table 9.14 Flexibility assumptions

Element of flexibility	How it has been considered within the assessment
Lateral LoD HVDC cables	The assessment of construction noise and vibration from the construction of HVDC cables assumed that the cables may be installed anywhere within the LoD. A worst-case assessment is therefore presented.
Lateral LoD Saxmundham Converter Station and Friston Substation	The assessment of construction noise and vibration from the construction of the proposed Saxmundham Converter Station and Friston Substation assumes that the Converter Station and substation may be constructed anywhere within the LoD. A worst-case assessment is therefore presented. The assessment of operational noise from the proposed Saxmundham Converter Station and Friston Substation is based on the proposed location within the LoD. Due to the relatively small LoD relative to the distance to NSR, movement within the Lateral LoD would not materially alter the outcome of the assessment.
Vertical LoD Saxmundham Converter Station and Friston Substation	The assessment of construction noise and vibration and operational noise from the proposed Saxmundham Converter Station and Friston Substation would not be materially affected by movement within the Vertical LoD.
Lateral and Vertical LoD overhead line (where Friston Substation is built as part of the Proposed Project)	The assessment of construction noise and vibration from the construction of overhead line assumes that the pylons may be located anywhere within the LoD. A worst case assessment is therefore presented. The assessment of construction noise and vibration not be materially affected by movement within the vertical LoD.
Order Limits – temporary construction works	Given that the majority of noise generating activity relates to the construction of the permanent infrastructure, assessment is based upon the LoD, with a contingency added for works that may take place elsewhere in the Order Limits.

Consideration of Scenarios

9.5.5 The following scenarios with regards to Friston Substation have been considered in the assessment as described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**:

- Friston Substation is constructed under the development consent granted to Scottish Power Renewables (SPR), pursuant to 'The East Anglia ONE North (EA1N) Offshore Wind Farm Order 2022' and 'The East Anglia TWO (EA2) Offshore Wind Farm Order 2022'; or

- Friston Substation is built as part of the Proposed Project.

9.5.6 The scenario where Friston Substation is built as part of the Proposed Project has been assessed as it represents the worst case.

9.5.7 The following options with regards to the proposed bridge over the River Fromus have been considered in the assessment as described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**:

- Option 1 - A bridge height of up to 6 m (from the ground level at the abutment to the top of the parapet) with 62 m long approach ramps; and
- Option 2 - A bridge height of up to 4 m (from the ground level at the abutment to the top of the parapet) with 42 m long approach ramps.

9.5.8 The noise and vibration assessment considers both scenarios and takes account of the closest distance to nearby NSR and the worst-case is presented. The difference in noise and vibration effects between the two options on nearby NSR is negligible due to the similar relative distances to nearby NSR for both options.

9.5.9 There is also optionality regarding the converter station construction compound location. Any one of the three areas of land included within the Order Limits (S02, S03 and S04/05), as illustrated in **Application Document 2.14.1 Indicative General Arrangement Plans – Suffolk**, could be used for this purpose. With regard to effects on NSR it has been assumed that any of these options could be selected and the assessment has considers the closest potential compound location to each NSR as a worst-case.

Sensitivity Test

9.5.10 It is likely that under the terms of the DCO, construction could commence in any year up to five years from the granting of the DCO which is assumed to be 2026. Consideration has been given to whether the effects reported would be any different if the works were to commence in any year up to year five. Where there is a difference, this is reported in Section 9.12 and indicates that the assessments presented in the chapter would not be expected to alter if the works were to commence at any point during those five years.

9.6 Study Area

9.6.1 This section describes the study areas for the various noise and vibration assessment. The study areas are shown graphically in **Application Document 6.4.2.9.1 Suffolk Noise and Vibration Baseline Information**.

Construction Noise Study Area

9.6.2 The study area for construction noise effects includes NSR within 300 m from the construction works associated with the Proposed Project, excluding traffic on the public highway which is considered separately below. This is based on guidance in BS 5228-1 (BSI, 2014) and DMRB LA 111 (Highways England et al., 2020).

Construction Vibration Study Area

9.6.3 The study area for construction vibration effects, based on guidance from BS 5228-2 (BSI, 2014) and DMRB LA 111, is 100 m from the closest construction activity with the potential to generate vibration impacts at NSR.

Construction Traffic Noise Study Area

9.6.4 Noise generated by construction traffic on the existing road network has been assessed for each applicable road. The assessment considers the change in BNL, calculated in line with the methodology described in CRTN (DoT, 1988), with a subsequent assessment of the impacts on NSR within 50 m of routes where potential significant effects are identified.

Operational Noise Study Area

9.6.5 The study area for operational noise effects from the proposed Saxmundham Converter Station, based on guidance from ISO 9613 (ISO, 2024), includes NSR within 1 km of the converter station, with a particular focus on the nearest NSR as it typically represents the worst case for assessment purposes.

9.7 Baseline Conditions

9.7.1 This section describes the baseline noise and vibration conditions in the study area for the Suffolk Onshore Scheme. Baseline information is shown graphically in **Application Document 6.4.2.9.1 Suffolk Noise and Vibration Baseline Information**.

Noise Sensitive Receptors

9.7.2 There are built-up residential areas at:

- Saxmundham to the west;
- Benhall Green, Benhall, and Sternfield to the southwest;
- Friston to the south;
- Coldfair Green to the south;
- Aldeburgh to the southeast;
- Sizewell to the northeast; and
- Leiston to the northeast.

9.7.3 There are also isolated NSR and small settlements within the noise and vibration study area located between the main built-up residential areas identified above.

9.7.4 With regards to operational noise from the proposed Saxmundham Converter Station, the site is surrounded by predominantly isolated residential NSR in all directions. The nearest NSR are located approximately 300 m from the proposed converter station site; R_5764 and R_14222, to the south and northwest, respectively. The nearest built-up areas are the town of Saxmundham, located approximately 600 m to the northwest (represented by R_17560 at the nearest point), and the village of Sternfield, located approximately 700m to the southwest (represented by R_17870 at the nearest point).

Noise Climate

Desk study

9.7.5 The Suffolk Onshore Scheme noise and vibration study area includes a mix of predominantly residential and rural environments. The noise climate is therefore relatively quiet away from main transport routes.

9.7.6 The main existing sources of noise include road traffic from the A12 to the west and, the A1094 which runs between the A12 at Friday Street to the west and Aldeburgh to the east. There are also relatively low levels of traffic on local roads. Away from road traffic sources, ambient sound levels are low and comprise general rural ambient noise, distant road traffic, foliage, and bird song.

9.7.7 Defra strategic noise mapping (Defra, 2019) indicates that ambient noise levels are moderate to high in the vicinity of the A12 and A1094 but reduce to relatively low levels beyond approximately 300 m from the roads.

9.7.8 There are no NIA on the existing local public highway along routes which may be used for construction traffic associated with the Suffolk Onshore Scheme. NIAs are determined via strategic noise maps and highlight the residential areas experiencing the highest 1% of noise levels from road and rail sources in England.

9.7.9 There are however NIAs in the wider area on main transport routes (e.g., The A12 at Farnham and Little Glemham to the southwest) which are not significantly affected by the Suffolk Onshore Scheme.

Noise surveys

9.7.10 A baseline noise survey has been conducted at six locations (S_L1-6), as shown in **Application Document 6.4.2.9.1 Suffolk Noise and Vibration Baseline** Information, to inform the assessment of operational noise from the proposed Saxmundham Converter Station. Details of the survey are provided in **Application Document 6.3.2.9.A Appendix 2.9.A Suffolk Noise Survey Data**. A summary of the measured noise levels is provided in Table 9.15.

Table 9.15 Summary of measured noise levels

Survey location	Time period	Average noise level, dB $L_{Aeq,15min}$	Maximum noise level, dB $L_{AFmax,15min}$	Background sound level, dB $L_{A90,15min}$
S_L1	Day	Range: 29 – 65 Average: 45	Range: 42 – 81 Typical: 56	Range: 21 – 52 Average: 34 Mode: 32
S_L2	Day	Range: 27 – 64 Average: 45	Range: 39 – 95 Typical: 64	Range: 23 – 47 Average: 35 Mode: 38
S_L3	Day	Range: 29 – 62 Average: 46	Range: 43 – 90 Typical: 55	Range: 22 – 49 Average: 36 Mode: 37

Survey location	Time period	Average noise level, dB $L_{Aeq,15min}$	Maximum noise level, dB $L_{AFmax,15min}$	Background sound level, dB $L_{A90,15min}$
S_L4	Day	Range: 35 – 59 Average: 47	Range: 48 – 85 Typical: 59	Range: 23 -51 Average: 38 Mode: 38
S_L5	Day	Range: 27 – 55 Average: 43	Range: 35 – 81 Typical: 52	Range: 22 – 47 Average: 34 Mode: 35
S_L6	Day	Range: 32 – 61 Average: 46	Range: 40 – 82 Typical: 59	Range: 25 – 48 Average: 36 Mode: 35
S_L1	Night	Range: 19 – 50 Average: 38	Range: 31 – 81 Typical: 58	Range: 17 – 38 Average: 26 Mode: 18
S_L2	Night	Range: 21 – 67 Average: 49	Range: 33 – 82 Typical: 38	Range: 20 – 42 Average: 26 Mode: 21
S_L3	Night	Range: 19 – 51 Average: 40	Range: 32 – 91 Typical: 41	Range: 16 – 50 Average: 22 Mode: 32
S_L4	Night	Range: 21 – 58 Average: 45	Range: 34 – 86 Typical: 49	Range: 18 – 41 Average: 27 Mode: 37
S_L5	Night	Range: 20 – 56 Average: 39	Range: 30 – 71 Typical: 42	Range: 17 – 38 Average: 28 Mode: 18
S_L6	Night	Range: 24 – 63 Average: 43	Range: 37 -85 Typical: 48	Range: 20 – 41 Average: 31 Mode: 32

9.7.11 Table 9.16 presents a summary of representative background sound levels during daytime and night-time periods at the survey location for use in the operational noise assessment.

Table 9.16 Summary of measured noise levels

Monitoring location	Representative background noise level, dB $L_{A90,15min}$	
	Daytime	Night-time
S_L1	31	20
S_L2	32	22

Monitoring location	Representative background noise level, dB $L_{A90,15min}$	
	Daytime	Night-time
S_L3	34	22
S_L4	35	23
S_L5	34	22
S_L6	35	25

9.7.12 The representative background sound levels to be used within the assessment of operational noise were discussed and agreed with East Suffolk Council.

9.7.13 With regards to construction noise, it is assumed that baseline noise levels are relatively low at all NSR. Lower noise significance thresholds are therefore used in the assessment of construction noise as a worst-case. As such, the assessment of construction noise would not be adversely altered with the inclusion of baseline noise data. As such baseline surveys were not conducted to inform the construction noise assessment.

Vibration baseline

9.7.14 Vibration impacts are assessed against fixed thresholds. It is assumed that existing vibration levels are negligible in the study area.

Future Baseline

9.7.15 No changes to the future noise and vibration baseline are anticipated that would alter the outcome of the assessment.

9.8 Proposed Project Design and Embedded Mitigation

9.8.1 The Proposed Project has been designed, as far as possible, following the mitigation hierarchy in order to, in the first instance, avoid or reduce noise and vibration impacts and effects through the process of design development, and by embedding measures into the design of the Proposed Project.

9.8.2 As set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, mitigation measures typically fall into one of three categories: embedded measures; control and management measures; and mitigation measures. Embedded, and control and management measures are set out below. Additional mitigation measures are discussed in Section 9.10.

Embedded Measures

9.8.3 Embedded measures have been integral in reducing, and where possible avoiding, the noise and vibration effects of the Proposed Project. Measures that that have been incorporated are:

- Sensitive routeing and siting of infrastructure and temporary works to avoid or reduce impacts on noise sensitive receptors; and

- Commitments made within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**. The following measures have been taken into account in assessing the noise and vibration effects of the Proposed Project:
  - NV07: Saxmundham Converter Station and Friston Substation will include appropriate noise mitigation measures in the design (e.g. plant selection, and transformer noise enclosures).

    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. Additionally, where feasible the substation and converter station designs will 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.

Control and Management Measures

9.8.4 Measures relevant to the control and management of impacts during construction have been included within **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**.

9.8.5 The following measures have been taken into account in assessing the noise and vibration effects of the Proposed Project:

- GG01: The Proposed Project will be delivered and operated in compliance with all relevant legislation, consents and permits.
- GG02: A Construction Environmental Management Plan (CEMP), a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced and submitted to the relevant authority for approval prior to construction of the relevant stage of the Proposed Project to which it relates. The plan produced will be substantially in accordance with the outline versions submitted as part of the application for development consent. In accordance with the Requirement 6 of Schedule 3 of the draft DCO, the contractor will need to comply with the approved plans (including any amendments to the plans subsequently approved).
- GG03: The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans. The title and contact details of person(s) accountable for issues relating to dust, waste, water, noise, vibration and soil will be displayed at the site boundary.
- GG04: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works (ECoW) will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The ECoW will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The ECoW will be supported as necessary by appropriate specialists, including ecologists, soil scientists and arboriculturists.

- GG05: Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the project. Topics will include but not be limited to:
  - pollution prevention and pollution incident response;
  - location and protection of sensitive environmental sites and features;
  - adherence to protected environmental areas around sensitive features;
  - working hours and noise and vibration reduction measures; and
  - agreed traffic routes, access points, etc.
- GG10: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG13: Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.
- GG26: Where working areas are fenced, the type of fencing installed will depend on the area to be fenced and will take into consideration the level of security required in relation to the surrounding land and public access, rural or urban environment and arable or stock farming. Consultation on the type of fencing will be undertaken with the relevant landowner and tenant where required. For some locations the fence used may also serve to provide acoustic and visual screening of the work sites and reduce the potential for disturbance of users in the surrounding areas. Fencing will be regularly inspected and maintained and removed as part of the demobilisation unless otherwise specified.
- GG27: Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the Proposed Project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken. This will be made available to local authorities for review on request.
- NV01: Construction working will be undertaken within the agreed working hours set out within the agreed working hours set out within the DCO. Best practicable means (e.g. screening) to reduce construction noise will be set out within the CEMP and Construction Noise and Vibration Management Plan (NVMP), which will be substantially in accordance with the Outline Construction Noise and Vibration Management Plan (OCNVMP).
- NV02: Construction traffic routes, access tracks, and construction haul routes will be surveyed for damage and irregularities (e.g. potholes) that may lead to vibration from construction traffic. Access tracks and construction haul routes will be well maintained.
- NV03: The contractor will conduct detailed construction noise and vibration assessments to determine whether there are likely to be any new or different significant adverse effects at NSR and therefore whether additional measures,

including site-specific BPM, may be required. The contractor would update the Outline Construction Noise and Vibration Management Plans (OCNVMP) into Construction Noise and Vibration Management Plans (CNVMP) and include site specific noise and vibration mitigation, as may be required.

- NV04: For routine and more substantial maintenance activities, the contractor will conduct a proportionate assessment of potential noise and vibration impacts, as may be required. Where applicable, mitigation measured will be incorporated into the works to reduce the effects from noise and vibration.
- NV05: For decommissioning activities, the contractor will conduct a proportionate assessment of potential noise and vibration impacts, as may be required. Where applicable, mitigation measured will be incorporated into the works to reduce the effects and noise and vibration.
- TT01: The Outline CTMTPs identify measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. They also provide suitable control for the means of access and egress to the public highway and set out measures for the maintenance and upkeep of the public highway. The plans also identify access for emergency vehicles. They will also set out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads.
- TT02: The contractor(s) will implement a monitoring and reporting system to check compliance with the measures set out within the Outline CTMTP's. This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles (HGV) to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the number of construction vehicles between the site and the strategic road network. Deviations from the authorised routes or changes to traffic levels that are higher than the CTMTP assumptions will require discussion with the relevant highways authorities to determine whether additional mitigation measures are needed.

9.8.6 Specific measures to control and manage noise and vibration during construction are set out in **Application Document 7.5.8.1 Outline Construction Noise and Vibration Management Plan – Suffolk**.

9.9 Assessment of Impacts and Likely Significant Effects

9.9.1 The assessment of the effects of the Proposed Project on noise and vibration receptors described in this section considers the embedded and control and management measures described in section 9.8 unless otherwise noted.

Construction Phase

9.9.2 There are a number of sources of noise and vibration during construction. The nature and duration of the works varies with a combination of relatively short duration works and long duration works at fixed stationary locations, and intermittent linear works. Stationary works are those that would occur at a relatively fixed location for the duration of the specific activity, such as the proposed Saxmundham Converter Station, Friston Substation or a construction compound. Linear works are those that would move along the route, such as cabling or overhead line works, with works at a specific location lasting for a relatively short duration.

9.9.3 For the purposes of this assessment, it is assumed that there is potential for works to exceed the temporal requirement for significance of ten days in any 15 consecutive days, or 40 days in any consecutive six months, as a reasonable worst case and to highlight potential noise and/or vibration 'hot-spots', although in practice some works may be of a shorter duration. Where a shorter duration is highly likely, and is therefore not expected to be significant, this has been stated. It is, however, assumed that works during weekend periods would consider temporal restrictions such that significant adverse effects from noise and vibration would not be expected solely due to weekend working. Significant effects may still occur, however, where there is also an exceedance of SOAEL values during both weekday and weekend daytime periods for a significant duration at an NSR.

9.9.4 Anticipated works are as follows:

- Setup of site compounds and bellmouth and temporary access route construction;
- Operation of site compounds;
- Converter station and substation construction;
- Construction of underground cables;
- Trenchless techniques for underground cable construction;
- Construction of pylons and overhead lines;
- Modification works to existing pylons and overhead lines; and
- Removal of existing pylons and overhead lines.

9.9.5 There is the possibility that the proposed Friston substation, and associated modifications to the existing overhead lines and pylons, are constructed under the consent of a separate project prior to the construction of the Suffolk Onshore Scheme of the Proposed Project. Under this scenario the Friston substation, and associated modifications to the existing overhead lines and pylons, would not be constructed by the Proposed Project, and the Proposed Project would simply connect into the Friston Substation. The effects of construction noise and vibration would be the same irrespective of under which consent the proposed Friston Substation is constructed; however; the noise and vibration effects of construction the substation have been assessed in this chapter

9.9.6 Construction noise and vibration data and calculations are provided in **Application Document 6.3.2.9.B Appendix 2.9.B Suffolk Construction Noise and Vibration Data** and **Application Document 6.3.2.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**. Results are also shown on **Application Document 6.4.2.9.2 Construction Noise Assessment Outputs (Daytime)**, **Application Document 6.4.2.9.3 Construction Noise Assessment Outputs (Night-time)** and **Application Document 6.4.2.9.4 Construction Vibration Assessment Outputs**.

Construction noise

9.9.7 Although mitigation, in the form of BPM, would be employed for all works to reduce the effects of construction noise, for the purposes of this assessment, no specific mitigation (such as screening) is included. This is so that construction noise 'hot-spots' can be identified where specific mitigation may be required to avoid significant adverse effects.

Daytime Construction Noise

9.9.8 The daytime construction noise assessment outputs are presented in **Application Document 6.4.2.9.2 Construction Noise Assessment Outputs (Daytime)** and summarised in Table 9.17.

Table 9.17 Summary of Construction Noise Assessment (Daytime) (Without Mitigation)

NSR Type/Sensitivity	Total Number of NSR in Study Area	Number of NSR experiencing magnitude of impact:			
		Negligible	Small	Medium	Large
Residential	277	110	140	19	8
High sensitivity non-residential	2	0	2	0	0
Medium sensitivity non-residential	48	5	43	0	0
Low sensitivity non-residential	0	0	0	0	0

9.9.9 The assessment indicates that there are potential significant adverse effects at 29 NSR during daytime works, without mitigation, due to:

- medium magnitude impacts at 19 residential NSR;
- large magnitude impacts at eight residential NSR; and
- small magnitude impacts at two non-residential NSR.

9.9.10 Of the 29 identified potential significant adverse effects during daytime periods, 11 relate just to the construction of temporary access routes (although there are some NSR affected by multiple activities, including access construction). In principle, the construction of temporary access routes should be a relatively short-duration activity and therefore not significant. However, for the purposes of this assessment it is assumed that the temporal criteria for significance may be exceeded. The remaining 18 significant effects relate to the construction of underground cables.

Night-time Construction Noise

9.9.11 Night-time works are not proposed as standard during the construction phase. However, there may be instances where night-time working is required. This is likely in relation to trenchless cable construction works and cable jointing, where continuous working may be required once started.

9.9.12 The night-time construction noise assessment outputs are presented in **Application Document 6.4.2.9.3 Construction Noise Assessment Outputs (Night-time)** and summarised in Table 9.18.

Table 9.18 Summary of Construction Noise Assessment (Night-time) (Without Mitigation)

NSR Type/Sensitivity	Total Number of NSR in Study Area	Number of NSR experiencing magnitude of impact:			
		Negligible	Small	Medium	Large
Residential	45	32	9	4	0
High sensitivity non-residential	0	0	0	0	0
Medium sensitivity non-residential	14	14	0	0	0
Low sensitivity non-residential	0	0	0	0	0

9.9.13 The assessment indicates that there are potential significant adverse effects at four NSR during night-time works, without mitigation, due to medium magnitude impacts at four residential NSR

9.9.14 All four locations relate to trenchless cable construction works, and it is assumed that this activity has the potential to exceed the temporal criteria for significance. There is therefore the potential for significant adverse effects due to this activity, without mitigation.

Weekend and Bank-Holiday Construction Noise

9.9.15 Weekend and bank holiday working is proposed during the construction phase. For the purposes of this assessment, it is assumed that construction activities during these periods would be similar to weekday daytime periods as a worst-case. However, the impact magnitudes are higher due to the increased sensitive and associated lower noise level threshold for potential significant effects. It is, however, assumed that works during weekend periods would consider temporal restrictions such that significant adverse effects from noise and vibration would not be expected purely due to weekend working.

9.9.16 The weekend and bank holiday construction noise assessment outputs are as per the daytime assessment and are therefore presented in **Application Document 6.4.2.9.2 Construction Noise Assessment Outputs (Daytime)** and summarised in Table 9.18.

Table 9.19 Summary of Construction Noise Assessment (Weekend and Bank Holidays) (Without Mitigation)

NSR Type/Sensitivity	Total Number of NSR in Study Area	Number of NSR experiencing magnitude of impact:			
		Negligible	Small	Medium	Large
Residential	277	110	45	67	55
High sensitivity non-residential	2	0	2	0	0
Medium sensitivity non-residential	48	5	3	34	6
Low sensitivity non-residential	0	0	0	0	0

9.9.17 The assessment indicates that there are potential significant adverse effects at 164 NSR due to weekend and bank holiday works, without mitigation, due to:

- medium magnitude impacts at 67 residential NSR;
- large magnitude impacts at 55 residential NSR;
- small magnitude impacts at two high-sensitivity non-residential NSR
- medium magnitude impacts at 34 medium non-residential NSR; and
- large magnitude impacts at six medium sensitivity non-residential NSR.

9.9.18 In terms of specific construction activities:

- 159 of the identified locations relate to the construction of temporary access routes;
- 60 relate to underground cable construction;
- 10 relate to earthworks and drainage;
- 6 relate to the construction of construction compounds;
- 1 relates to the construction of the proposed Friston Substation;
- 1 relates to new pylon construction; and
- 1 relates to the construction of the proposed Saxmundham Converter Station.

9.9.19 It is noted that some NSR are affected by more than one construction activity.

9.9.20 Works during weekend periods would consider temporal restrictions, such that significant adverse effects from noise and vibration would not be expected solely due to weekend working as part of the consideration of BPM. This would be the case for all locations where there are potential significant effects solely due to weekend working. However, there are potential significant effects at NSR which have threshold exceedance during both weekday and weekend/bank holiday periods, without mitigation. As such, the weekend and bank-holiday construction noise 'hot-spots' are the same as those where there are potential significant effects during daytime periods,

without mitigation. This is because there is a likelihood for the temporal criteria for significance to be exceeded due to a single weekend working period at these locations, without mitigation.

9.9.21 In summary, although there is the potential for significant adverse effects at 164 NSR due to potential weekend and bank-holiday working, there are only likely to be significant adverse effects at 29 NSR due to temporal restrictions, not taking account of other mitigation measures. These are discussed further in Section 9.10.

Summary of construction noise assessment

9.9.22 Table 9.20 summarizes the locations where there are potential significant adverse effects from construction noise without mitigation, taking account of both noise level (i.e. exceedance of the SOAEL) and the temporal criteria for significant adverse effects. The identified NSR are also shown in **Application Document 6.4.2.9.2 Construction Noise Assessment Outputs (Daytime)** and **Application Document 6.4.2.9.3 Construction Noise Assessment Outputs (Night-time) and Application Document Figure 6.4.2.9.5 Construction Noise and Vibration 'Hot-Spot' Receptor Location IDs – Suffolk Onshore Scheme**.

9.9.23 The assessment indicates that there are potential significant adverse effects at:

- Twenty-nine NSR during daytime works;
- Four NSR during potential night-time works; and
- Twenty-nine NSR during potential weekend works.

9.9.24 Of the 29 identified potential significant adverse effects during daytime periods and weekend periods, 11 relate solely to the construction of temporary access routes (although there are some NSR affected by multiple activities, including access construction). In principle, the construction of temporary access routes should be a relatively short-duration activity and therefore not significant. However, for the purposes of this assessment it is assumed that the temporal criteria for significance may be exceeded. The remaining 18 significant effects relate to the construction of underground cables.

9.9.25 The four identified potential significant effects during night-time periods relate to trenchless cable construction works.

9.9.26 There are no identified significant adverse effects in relation to the following works, principally due to the distance between the works locations and NSR:

- the set up of construction compounds;
- the operation of site compounds;
- converter station and substation construction;
- trenchless cable construction works (daytime);
- construction of pylons and overhead lines;
- modification works to existing pylons and overhead lines; and
- removal of existing pylons and overhead lines.

Table 9.20 Construction Noise Assessment Summary of Potential Significant Effects (Without Additional Mitigation)

Construction Activity	Applicable Works Location	Property ID(s)	Magnitude of Impact	Receptor Sensitivity	Significance
Daytime Noise Assessment					
Temporary Access Track Construction	Access off Leiston Road	R_18540 R_5113 R_16041 R_10908	Large	Residential	**Major**
	Access off Leiston Road	R_11819 R_5095 R_13287	Medium	Residential	**Moderate**
	Access of School Road	R_2044 R_1825	Medium	Residential	**Moderate**
	Access between Grove Road and School Road	R_13428 R_28114 R_594	Medium	Residential	**Moderate**
	Access off Grove Road	CS_54 CS_89	Small	High (Community facilities and church)	**Moderate**
	Access off Saxmundham, Road	R_17854	Medium	Residential	**Moderate**
	Access off B1121 The Street	R_12065 R_11692	Medium	Residential	**Moderate**

Construction Activity	Applicable Works Location	Property ID(s)	Magnitude of Impact	Receptor Sensitivity	Significance
	Access of Redbarn Lane	R_12830 R_2856 R_8533	Medium	Residential	**Moderate**
	Access between B1121 and proposed Converter Station	R_14222	Medium	Residential	**Moderate**
Cable Construction	Cable Construction around Leiston Road	R_18540 R_10908 R_5113	Large	Residential	**Major**
	Cable Construction around Leiston Road	R_11819 R_13287 R_16041 R_17129 R_5095 R_6587	Medium	Residential	**Moderate**
	Cable Construction between Grove Road and School Road	R_594 R_13428 R_28114 R_3464 R_28040 R_6784	Medium	Residential	**Moderate**
	Cable Construction between Fristonmoor Lane and Grove Road	R_17257 R_4925 R_8188	Medium	Residential	**Moderate**

Construction Activity	Applicable Works Location	Property ID(s)	Magnitude of Impact	Receptor Sensitivity	Significance
Night-time Noise Assessment					
Trenchless crossing	Landfall	R_17129 R_1966 R_1955 R_1924	Medium	Residential	**Moderate**
Weekend Noise Assessment					
As per daytime assessment (taking account of temporal restrictions)					

Construction vibration

9.9.27 Although mitigation, in the form of BPM, would be employed for all works to reduce the effects of construction vibration, for the purposes of this assessment, no specific mitigation (such as the use of alternate methods) is included. This is so that construction vibration 'hot-spots' can be identified where specific mitigation may be required to avoid significant adverse effects.

9.9.28 The majority of construction activities are not expected to generate significant levels of vibration. However, activities that may generate significant levels of vibration include:

- ground compaction – this may be required during activities such as the construction of temporary access routes; and
- percussive or vibratory piling – this may be required for activities such as the foundation works of new pylons.

9.9.29 The assessment of construction vibration considers the effects of vibration:

- on people within buildings; and
- on buildings and structures.

Construction vibration effects on people within buildings

9.9.30 The outputs of the construction vibration assessment are provided in **Application Document 6.4.2.9.4 Construction Vibration Assessment Outputs** and the results are summarised in Table 9.21.

9.9.31 Potential vibration levels are predicted to exceed the SOAEL at six NSR due to compaction activities associated with the construction of access routes, and two NSR due to compaction activities associated with the underground cable construction (the SOAEL at these two NSR is exceeded due to both potential compaction of the access route and the underground cables). However, the duration of exceedance would be expected to be relatively short (typically a single day) and is therefore not for a duration that would be considered significant. Construction vibration would therefore cause a **minor** effect at these NSR and be **not significant**.

Table 9.21 Construction Vibration Assessment Summary of Potential Significant Effects (Without Additional Mitigation)

Construction Activity	Site Location(s)	Property ID(s)	Magnitude of Impact	Receptor Sensitivity	Exceedance for Significant Duration Likely?	Significant Effect?
Compaction	Access and cable route construction around Leiston Road	R_18540 R_16041	Medium	Residential	No	No
	Bellmouth construction off Aldeburgh Road	C_1085 C_1964 C_1004	Medium	Residential	No	No
	Access construction of Saxmundham Road	R_17854	Medium	Residential	No	No

Construction vibration effects on buildings and structures

9.9.32 The assessment indicates that there are no structures or buildings where there is the potential for damage due to construction vibration. This would be reviewed by the contractor in their specific detailed assessments prior to the start of works.

Construction traffic noise

9.9.33 During construction, there would be additional vehicle traffic (including heavy goods vehicles) on the local road network, travelling to and from the work sites. An assessment of potential noise impacts from construction traffic is presented in **Application Document 6.3.2.9.C Appendix 2.9.C Suffolk Construction Traffic Noise Assessment**.

9.9.34 The assessment indicates that construction traffic noise impacts are negligible on all routes. The impact of noise from construction traffic is therefore **not significant** at all NSR.

Operation and Maintenance Phase

Operational noise

9.9.35 An indicative assessment of operational noise from the proposed Saxmundham Converter Station, based on current design information, is presented in **Application Document 6.3.2.9.D Appendix 2.9.D Suffolk Operational Noise Assessment**.

9.9.36 With standard embedded mitigation measures, the impact of operational noise from the proposed Saxmundham Converter Station on all nearby NSR, has been assessed as having a small magnitude impact, during both daytime and night-time periods, taking account of context. This would result in a **minor adverse** effect at all nearby NSR, which is considered to be **not significant**.

9.9.37 The assessment is indicative for the purpose of demonstrating that significant adverse effects can be avoided. The assessment is based on Front End Engineering Design (FEED) information, including information from other similar converter stations, and standard noise mitigation measures. Further detailed design would be undertaken, which will include consideration of specific noise mitigation measures. However, it is not anticipated that effects would be of greater significance than those reported within this chapter.

9.9.38 With regards to the proposed Friston Substation, there are no sources of operational noise (such as transformers) during the normal operation of the substation. Operational noise during the normal operation of the proposed Friston Substation would therefore be negligible and **not significant**.

9.9.39 Although scoped out of the ES, indicative assessments of operational noise from auxiliary equipment within the proposed Friston Substation and alterations to overhead lines has also been conducted at the request of East Suffolk Council. The assessments are included in **Application Document 6.3.2.9.E Appendix 2.9.E Friston Substation and OHL Operational Noise Information (Informative).** The assessments indicate that operational noise from auxiliary equipment within the proposed Friston Substation and alterations to overhead lines would be **not significant**.

Operational maintenance noise and vibration

9.9.40 Routine operational maintenance is not expected to generate high levels of noise or vibration and would generally involve relatively short-term activities. The effects of noise and vibration from routine maintenance activities would be expected to be lower than those during construction and therefore have a negligible or small magnitude impact at all NSR which results in a **negligible** to **minor** effect, which is considered to be **not significant**.

9.9.41 Noise and vibration effects from more substantial maintenance activities would be expected to be similar to those during the construction phase. In these circumstances the contractor will undertake detailed noise and vibration assessments and determine best practicable means to reduce the effects of noise and vibration at nearby NSR (commitment NV04). Noise and vibration from substantial maintenance activities would therefore be a negligible or small magnitude impact at all NSR which results in a **negligible** to **minor** effect, which is considered to be **not significant**.

Decommissioning Phase

9.9.42 Noise and vibration effects from more substantial decommissioning activities would be expected to be similar to those during the construction phase. Similarly, the contractor will undertake detailed noise and vibration assessments and determine best practicable means to reduce the effects of noise and vibration at nearby NSR (commitment NV05). Noise and vibration from decommissioning would therefore be a negligible or small magnitude impact at all NSR which results in a **negligible** to **minor** effect, which is considered to be **not significant**.

9.10 Additional Mitigation

Introduction

9.10.1 This section sets out the proposed additional mitigation for the likely significant effects during construction outlined in Section 9.9. Additional topic and site-specific mitigation measures that have been applied to mitigate or offset any likely significant effects are included in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**.

Construction Noise

9.10.2 As set out in paragraph 9.9.7 the construction noise assessment presented in Section 9.9 assumes that there are no site-specific BPM (such as screening) included, so as to present a reasonable worst-case and identify construction noise ‘hot-spots’ where site-specific mitigation measures may be required to avoid significant adverse effects.

9.10.3 The assessment presented in Section 9.9 identified potential significant adverse effects at 29 NSR due to daytime construction noise, 29 NSR due to potential weekend works, and four NSR due to potential night-time works, taking account of both the noise level and the temporal criteria for significant effects.

9.10.4 National Grid has committed to employ BPM (NV01) (secure via **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**) to reduce the adverse effects of construction noise. Additional temporary noise mitigation measures will be put in place to reduce noise levels from

construction plant and machinery at the following locations, unless a detailed assessment is undertaken that demonstrates that no significant noise impacts would occur to nearby NSR:

- Access construction off Leiston Road;
- Access construction off School Road;
- Access construction between Grove Road and School Road;
- Access construction off Saxmundham Road;
- Access construction off B1121 The Street;
- Access construction off Redbarn Lane;
- Access construction between B1121 and proposed converter station;
- trenchless cable construction at landfall;
- Underground cable construction around Leiston Road;
- Underground cable construction between Fristonmoor Lane and Grove Road; and
- Underground cable construction between Grove Road and School Road.

9.10.5 Examples of construction noise mitigation measures are provided in Table 9.22 with the attenuation values that these typically achieve also provided.

Table 9.22 Examples of Construction Noise Mitigation Measures

Example Mitigation	Likely Attenuation
Screening	5 dB where activities are partially obscured and 10 dB where activities are totally obscured
Specified use of quieter plant	5 to 10 dB
Suitable material handling methods. Do not drop materials from excessive heights	Up to 15 dB
Alternative methods for pylon construction e.g. use of pad foundation	10 to 20 dB
Use an acoustic shed with adequate ventilation around trenchless crossing machinery	Up to 15 dB
Use of temporal restrictions	Avoiding temporal significance criteria being exceeded.

9.10.6 With regards to potential works during weekend and bank-holiday periods, construction noise levels would be expected to be reduced to below the weekend/bank holiday threshold noise levels at most or all NSR with the use of BPM. However, there is the potential for exceedance of the threshold at the 29 identified NSR depending on the level of mitigation that can be achieved with BPM. Where weekend and bank holiday construction noise levels cannot be reduced to below the threshold for potential

significant effects, temporal restrictions would be considered as part of BPM to avoid potential significant effects.

9.10.7 A summary of the likely residual construction noise levels are provided in Table 9.23.

Table 9.23 Construction Noise Assessment Summary of Potential Significant Effects (With Additional Mitigation)

Construction Phase	Property ID	Predicted Noise Level Without Mitigation	Likely Attenuation	Predicted Noise Level With Mitigation	Magnitude of Impact	Receptor Sensitivity	Significance
Daytime							
Access construction	R_18540	72 dB $L_{Aeq,T}$	≥10 dB	≤62 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_5113	71 dB $L_{Aeq,T}$	≥10 dB	≤61 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_16041	71 dB $L_{Aeq,T}$	≥10 dB	≤61 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_10908	70 dB $L_{Aeq,T}$	≥10 dB	≤60 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_11819	70 dB $L_{Aeq,T}$	≥10 dB	≤60 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_17854	70 dB $L_{Aeq,T}$	≥10 dB	≤60 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_5095	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_12065	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_12830	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_2856	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_8533	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_13428	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_28114	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_2044	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_1825	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_11692	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_594	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_13287	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_14222	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	CS_54	52 dB $L_{Aeq,T}$	≥10 dB	≤42 dB $L_{Aeq,T}$	Negligible	High	Minor

Construction Phase	Property ID	Predicted Noise Level Without Mitigation	Likely Attenuation	Predicted Noise Level With Mitigation	Magnitude of Impact	Receptor Sensitivity	Significance
	CS_89	52 dB $L_{Aeq,T}$	≥10 dB	≤42 dB $L_{Aeq,T}$	Negligible	High	Minor
Cable construction	R_18540	75 dB $L_{Aeq,T}$	≥10 dB	≤65 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_10908	72 dB $L_{Aeq,T}$	≥10 dB	≤62 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_5113	71 dB $L_{Aeq,T}$	≥10 dB	≤61 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_16041	70 dB $L_{Aeq,T}$	≥10 dB	≤60 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_5095	69 dB $L_{Aeq,T}$	≥10 dB	≤59 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_594	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_6784	68 dB $L_{Aeq,T}$	≥10 dB	≤58 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_11819	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_13428	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_28114	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_13287	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_8188	67 dB $L_{Aeq,T}$	≥10 dB	≤57 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_17129	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_3464	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_28040	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_6587	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_17257	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
	R_4935	66 dB $L_{Aeq,T}$	≥10 dB	≤56 dB $L_{Aeq,T}$	Small	Residential	Minor
Night-time							
trenchless cable construction	R_1966	47 dB $L_{Aeq,T}$	≥10 dB	≤37 dB $L_{Aeq,T}$	Negligible	Residential	Negligible
	R_1955	47 dB $L_{Aeq,T}$	≥10 dB	≤37 dB $L_{Aeq,T}$	Negligible	Residential	Negligible
	R_1924	47 dB $L_{Aeq,T}$	≥10 dB	≤37 dB $L_{Aeq,T}$	Negligible	Residential	Negligible
	R_17129	46 dB $L_{Aeq,T}$	≥10 dB	≤36 dB $L_{Aeq,T}$	Negligible	Residential	Negligible

Construction Phase	Property ID	Predicted Noise Level Without Mitigation	Likely Attenuation	Predicted Noise Level With Mitigation	Magnitude of Impact	Receptor Sensitivity	Significance
Weekend							
None identified due to temporal criteria not being likely to be exceeded where timing of works is considered.							
Note – The noise levels presented are the average predicted construction noise levels at the NSR, irrespective of the duration of the activity during the respective working period. The time period 'T' therefore assumes works would occur over the full respective working period (e.g. 12-hour daytime, 8-hour night-time) as a worst-case. Should works occur for a shorter duration than the respective working period, the average noise level over the respective working period would reduce accordingly.							

9.10.8 The above measures are secured through commitment NV08 of **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**. In addition, as per commitment NV03, the contractor would conduct detailed construction noise assessments to determine whether additional measures, including site-specific BPM, may be required. **Application Document 7.5.8.1 Outline Construction Noise and Vibration Management Plan – Suffolk** would also be updated from an OCNVMP into a NVMP, incorporating the findings of their detailed assessment and associated site-specific mitigation.

9.11 Residual Effects and Conclusions

9.11.1 Table 9.24 to Table 9.26 summarise the residual effects of the Proposed Project on noise and vibration receptors following the implementation of additional mitigation measures outlined in Section 9.8. Location and address information for the 'hot-spot' NSR identified is presented in

9.11.2 Table 9.27, and are shown in **Application Document 6.4.2.9.5 Construction Noise and Vibration 'Hot-Spot' Receptor Location IDs - Suffolk Onshore Scheme**.

Table 9.24 Summary of residual noise and vibration effects (Construction)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
Daytime, weekend, and bank holiday construction noise							
R_18540	Residential	Construction noise from access construction	Large	Major	Mitigation in the form of BPM, such as screening and temporal restrictions.	Small	Minor
R_5113	Residential		Large	Major		Small	Minor
R_16041	Residential		Large	Major		Small	Minor
R_10908	Residential		Large	Major		Small	Minor
R_11819	Residential		Medium	Moderate		Small	Minor
R_17854	Residential		Medium	Moderate		Small	Minor
R_5095	Residential		Medium	Moderate		Small	Minor
R_12065	Residential		Medium	Moderate		Small	Minor
R_12830	Residential		Medium	Moderate		Small	Minor
R_2856	Residential		Medium	Moderate		Small	Minor
R_8533	Residential		Medium	Moderate		Small	Minor
R_13428	Residential		Medium	Moderate		Small	Minor
R_28114	Residential		Medium	Moderate		Small	Minor
R_2044	Residential		Medium	Moderate		Small	Minor
R_1825	Residential		Medium	Moderate		Small	Minor
R_11692	Residential		Medium	Moderate		Small	Minor

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
R_594	Residential		Medium	Moderate		Small	Minor
R_13287	Residential		Medium	Moderate		Small	Minor
R_14222	Residential		Medium	Moderate		Small	Minor
CS_54	High		Small	Moderate		Negligible	Minor
CS_89	High		Small	Moderate		Negligible	Minor
R_18540	Residential	Construction noise from underground cable construction	Large	Major	Mitigation in the form of BPM, such as screening and temporal restrictions.	Small	Minor
R_10908	Residential		Large	Major		Small	Minor
R_5113	Residential		Large	Major		Small	Minor
R_16041	Residential		Large	Major		Small	Minor
R_5095	Residential		Medium	Moderate		Small	Minor
R_594	Residential		Medium	Moderate		Small	Minor
R_11819	Residential		Medium	Moderate		Small	Minor
R_13428	Residential		Medium	Moderate		Small	Minor
R_28114	Residential		Medium	Moderate		Small	Minor
R_13287	Residential		Medium	Moderate		Small	Minor
R_3464	Residential		Medium	Moderate		Small	Minor
R_28040	Residential		Medium	Moderate		Small	Minor
R_17129	Residential		Medium	Moderate		Small	Minor
R_6587	Residential		Medium	Moderate		Small	Minor

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
R_17257	Residential		Medium	Moderate		Small	Minor
R_4935	Residential		Medium	Moderate		Small	Minor
R_6784	Residential		Medium	Moderate		Small	Minor
R_8188	Residential		Medium	Moderate		Small	Minor
All other receptors	Residential and low to medium sensitivity non-residential receptors	All other construction activities	Negligible to Small	Minor	None, other than standard BPM	Negligible to small	Negligible to Minor
	High sensitivity non-residential receptors		Negligible	Minor	None, other than standard BPM	Small	Minor
Night-time construction noise							
R_1966	Residential	Construction noise from trenchless cable construction	Medium	Moderate	Mitigation in the form of BPM, such as screening.	Small	Minor
R_17129	Residential		Medium	Moderate		Small	Minor
R_1955	Residential		Medium	Moderate		Small	Minor
R_1924	Residential		Medium	Moderate		Small	Minor
All other receptors	Residential and low to medium sensitivity non-residential receptors	All other construction activities	Negligible to Small	Minor	None, other than standard BPM	Negligible to small	Negligible to Minor

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
	High sensitivity non-residential receptors		Negligible	Minor	None, other than standard BPM	Small	Minor
Construction vibration							
All receptors	Residential and low to medium sensitivity non-residential receptors	All other construction activities	Negligible to Small	Minor	None, other than standard BPM	Negligible to small	Negligible to Minor
	High sensitivity non-residential receptors		Negligible	Minor	None, other than standard BPM	Small	Minor

Table 9.25 Summary of residual noise and vibration effects (Operation and Maintenance)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
All	Various	Operational noise from proposed Saxmundham Converter Station and Friston Substation	Small	Minor	Mitigation measures to be incorporated in the design	Small	Minor

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
All	Various	Noise and vibration from maintenance activities likely to be similar or no worse than those during construction.	Negligible to Large	Moderate to Major	Mitigation in the form of BPM, such as screening.	Negligible to Small	Negligible to Minor

Table 9.26 Summary of residual noise and vibration effects (Decommissioning)

Receptor	Sensitivity	Description of Impact	Likely Significant Effect		Additional Mitigation Measures	Residual Effect	
			Magnitude	Significance		Magnitude	Significance
All	various	Noise and vibration from decommissioning activities likely to be similar or no worse than those during construction.	Negligible to Large	Moderate to Major	Mitigation in the form of BPM, such as screening.	Negligible to Small	Negligible to Minor

Table 9.27 Location and Address Information for ‘Hot-Spot’ NSR

Receptor	Location Coordinates		Address
	Easting	Northing	
CS_54	641274	260494	Friston Village Hall, Church Path, Friston, Suffolk, IP17 1PU
CS_89	641348	260487	St Marys Church, Church Path, Friston, Suffolk, IP17 1PP
R_594	642147	261323	Swallow Cottage, Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL
R_1825	642769	261489	2 Old School, School Road, Knodishall, Knodishall, Suffolk, IP17 1TR
R_1924	646016	258262	Brick Kiln Cottage, Warren Hill Lane, Aldeburgh, Suffolk, IP15 5QB
R_1955	646066	258251	Brackenholme, Warren Hill Lane, Aldeburgh, Suffolk, IP15 5QB
R_1966	646016	258262	Annexe, Brick Kiln Cottage, Warren Hill Lane, Aldeburgh, Suffolk, IP15 5QB
R_2044	642761	261499	1 Old School, School Road, Knodishall, Knodishall, Suffolk, IP17 1TR

R_2856	639924	260386	Annexe At, Friston Hall Cottages, Red Barn Lane, Sternfield, Suffolk, IP17 1NQ
R_3464	642171	261307	Robin Cottage, Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL
R_4935	640965	261697	High House Farmhouse, Fristonmoor Lane, Knodishall, Suffolk, IP17 1XD
R_5095	645564	258462	North East, Leiston Road, Aldeburgh, Suffolk, IP15 5QD
R_5113	645544	258311	Warren House, Leiston Road, Aldeburgh, Suffolk, IP15 5QE
R_6587	645465	258471	Tall Pines, Leiston Road, Aldeburgh, Suffolk, IP15 5QE
R_6784	642096	261293	Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL
R_8188	640960	261712	The Granary, High House Farm, Fristonmoor Lane, Knodishall, Suffolk, IP17 1XD
R_8533	639928	260387	1 Friston Hall Cottages, Red Barn Lane, Friston, Sternfield, Suffolk, IP17 1NQ
R_10908	645567	258440	Hillbury, Leiston Road, Aldeburgh, Suffolk, IP15 5QD
R_11692	639869	261471	44, The Street, Sternfield, Sternfield, Suffolk, IP17 1NF
R_11819	645642	258312	Gorse Hill, Leiston Road, Aldeburgh, Suffolk, IP15 5QD

R_12065	639862	261468	Baldrys Cottage, The Street, Sternfield, Sternfield, Suffolk, IP17 1NG
R_12830	639926	260391	2 Friston Hall Cottages, Red Barn Lane, Friston, Sternfield, Suffolk, IP17 1NQ
R_13287	645322	258598	Pinehurst, Pinehurst, Leiston Road, Aldeburgh, Suffolk, IP15 5QE
R_13428	642160	261325	Avocet Cottage, Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL
R_14222	639370	262493	Wood Farm, Church Hill, Sternfield, Saxmundham, Suffolk, IP17 1XE
R_16041	645633	258338	Annexe, Gorse Hill, Leiston Road, Aldeburgh, Suffolk, IP15 5QD
R_17129	645874	258314	Kings Legend, Warren Hill Lane, Aldeburgh, Suffolk, IP15 5QB
R_17257	640990	261689	Fristonmoor Barn, Fristonmoor Lane, Knodishall, Knodishall, Suffolk, IP17 1XD
R_17854	640807	260767	Ambelie, Saxmundham Road, Friston, Friston, Suffolk, IP17 1NJ
R_18540	645567	258330	Warren Cottage, Leiston Road, Aldeburgh, Suffolk, IP15 5QE
R_28040	642142	261314	Kingfisher Cottage, Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL

R_28114	642170	261323	Heron Cottage, Manor Farm, Grove Road, Knodishall, Suffolk, IP17 1TL

9.11.3 The noise and vibration assessment indicates that there are potential significant adverse effects at a small number of properties during the construction phase, without mitigation. However, the assessment shows that these can be avoided through the use of standard mitigation measures in the form of BPM. Further detailed construction noise and vibration assessments would be undertaken by the contractor prior to commencing works. The outcome of these detailed assessments would include details of specific mitigation measures for each activity (commitment NV03 within REAC). Noise and vibration effects during the construction phase are therefore expected to be **not significant**.

9.11.4 The effects of noise and vibration from routine and more substantial maintenance activities are expected to be similar or less than those during construction. Again, noise and vibration effects from routine and more substantial maintenance activities would be mitigated through the use of BPM and may be supported by detailed noise and vibration assessment, if applicable (commitment NV04 within REAC). Noise and vibration effects from routine and more substantial maintenance during the operational phase are therefore expected to be **not significant**.

9.11.5 The assessment of operational noise indicates that significant adverse effects can be avoided with the use of standard noise mitigation measures. Further detailed operational noise assessments will be undertaken by National Grid and/or the developer based on their specific designs. The outcome of these detailed assessments would include details of specific mitigation measures (commitment NV03 within REAC). Noise effects during the operational phase are therefore expected to be **not significant**.

9.11.6 The effects of noise and vibration from decommissioning activities are expected to be less than or no worse than those during construction. For such works, the contractor will prepare a noise and vibration assessment and include noise and vibration mitigation measures where appropriate (commitment NV05 within REAC). Noise and vibration effects during the decommissioning phase are therefore expected to be **not significant**.

9.12 Sensitivity Testing

9.12.1 Under the terms of the DCO, construction could commence in any year up to five years from the granting of the DCO which is assumed to be 2026.The results of the various noise and vibration assessments presented in the chapter would not be expected to alter if the works were to commence at any point during those five years.

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