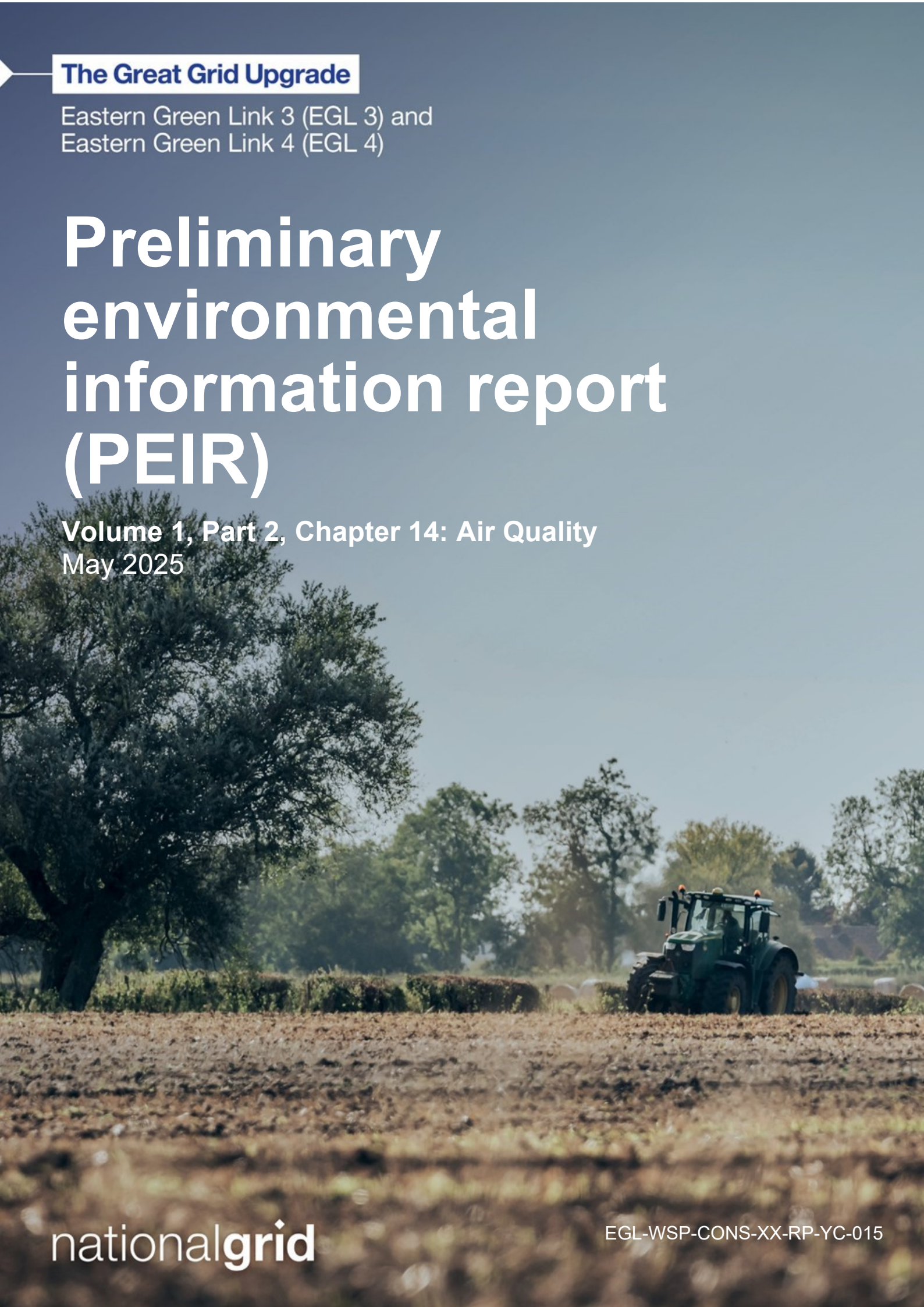
The Great Grid Upgrade

Eastern Green Link 3 (EGL 3) and
Eastern Green Link 4 (EGL 4)

Preliminary environmental information report (PEIR)

Volume 1, Part 2, Chapter 14: Air Quality

May 2025



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EGL-WSP-CONS-XX-RP-YC-015

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14.1 Introduction

14.1.1 This chapter presents the preliminary findings of the Environmental Impact Assessment (EIA) undertaken to date for the Eastern Green Link 3 (EGL 3) and Eastern Green Link 4 (EGL 4) English Onshore Scheme, with respect to air quality. The preliminary assessment is based on provisional information obtained to date. It should be read in conjunction with the description of the Projects provided in **Volume 1, Part 1, Chapter 4: Description of the Projects.**

14.1.2 This chapter describes the methodology used, the datasets that have informed the preliminary assessment, baseline conditions, environmental measures, and the preliminary air quality effects that could result from the English Onshore Scheme during the construction and operation (and maintenance) phases. Specifically, it relates to the English onshore elements of EGL 3 and EGL 4 (the English Onshore Scheme) landward of Mean Low Water Springs (MLWS).

14.1.3 This chapter should be read in conjunction with:

- **Volume 1, Part 2, Chapter 6: Biodiversity** (with regards to potential impacts and effects on ecological receptors);
- **Volume 1, Part 2, Chapter 12: Traffic and Transport** (with regards to the potential impacts and effects of road traffic associated with the English Onshore Scheme to Air Quality receptors);
- **Volume 1, Part 2, Chapter 15: Socioeconomics, Recreation and Tourism** (with regards to the potential for air quality and dust effects associated with the English Onshore Scheme to negatively affect some Socio-economic, Recreation and Tourism receptors);
- **Volume 1, Part 2, Chapter 16: Health and Wellbeing** (due to the close association between some sensitive human receptors and the potential for overlapping embedded environmental measures); and
- **Volume 1, Part 4, Chapter 27: Greenhouse Gases** (with regards to potential effects from greenhouse gas emissions).

14.1.4 This chapter is supported by the following figures:

- **Volume 3, Part 2, Figure 14-1: Air Quality Study Area;** and
- **Volume 3, Part 2, Figure 14-2: Construction Dust Assessment Study Area.**

14.1.5 This chapter is supported by the following appendices:

- **Volume 2, Part 1, Appendix 1.2.A: Regulatory and Planning Context;**
- **Volume 2, Part 1, Appendix 1.5.A: Outline Register of Design Measures**;
- **Volume 2, Part 1, Appendix 1.5.B: Outline Code of Construction Practice (CoCP);**

- **Volume 2, Part 2, Appendix 2.14.A: Construction Dust Assessment and Methodology;** and
- **Volume 2, Part 2, Appendix 2.14.B: Air Quality Monitoring.**

Limitations

14.1.6 The information provided in this Preliminary Environmental Information Report (PEIR) is provisional and subject to change as the design evolves towards the information that will inform the Environmental Statement (ES) at the application phase. The final assessment of air quality effects will be reported in the ES. The PEIR has been produced to fulfil National Grid Electricity Transmission plc (NGET) consultation duties in accordance with Section 42 of the PA2008 and enable consultees to develop an informed view of the preliminary potential significant effects of the English Onshore Scheme.

14.1.7 At this stage there is limited detail available on the type, number, location and operational hours of Non-Road Mobile Machinery and diesel generators which will be required during the construction, operation and maintenance phases of the English Onshore Scheme. This limits the PEIR assessment as potential emission impacts from these sources cannot not be quantified as yet. However, the Applicant will ensure that this information is collated and reviewed prior to ES stage, in order that a detailed assessment can be undertaken within the ES to ensure all potential impacts are assessed and considered.

14.1.8 The construction phase traffic data analysed and discussed is provisional at this stage and is limited to the peak construction year of 2031 for the English Onshore Scheme (inclusive of EGL 3 and EGL 4 being constructed simultaneously). The year 2031 is anticipated to generate the greatest volume of trips at bellmouths across the Projects as a whole and therefore is considered to be the peak year. The traffic data provided is based on information derived from 47 traffic count sites and has been factored to include growth and traffic generated by the English Onshore Scheme. Traffic data assumptions are detailed in **Volume 1, Part 2, Chapter 12, Traffic and Transport.** The air quality study area for vehicle emissions has been predicated on the Projects' traffic flow information.

14.1.9 There is limited detail regarding decommissioning activities, therefore, effects associated with decommissioning activities are not discussed in this chapter; however, **Table 4.21** in **Volume 1, Part 1, Chapter 4: Description of the Projects** provides a high-level summary assessment of the likely significant effects associated with decommissioning. The potential effects on air quality associated with the decommissioning phase are considered to be no greater to those risks identified during the construction phase.

Preliminary significance conclusions

14.1.10 For ease of reference, a summary of the significant and potential significant effects from the preliminary Air Quality assessment is provided in **Table 14–1** below. All other effects in relation to Air Quality have been assessed as not significant (unless stated that a conclusion cannot be defined at this stage). Further details of the methodology behind the assessment, and a detailed narrative of the assessment itself are provided within the sections below.

Table 14–1 - Preliminary summary of significance of effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor	Magnitude of change	Significance	Summary rationale
Construction Phase Vehicle Emissions: Human Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	A limited number of roads meet the assessment criteria for human receptors at PEIR stage based off the preliminary traffic data, however these are confined to central Boston and the A47 between Lynn Road and Wisbech. Further work will be undertaken at ES stage, which (on review of the final construction phase traffic data) may include air quality modelling should the relevant assessment criteria be met.
Construction Phase Vehicle Emissions: Ecological Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	There are no ecological sites with statutory designations which fall within the PEIR stage study area based on the preliminary traffic data.
Construction Phase Dust: Human Receptors	High	Large	Not Significant	It is expected that with the adoption of the control and management measures (as outlined within **Volume 2, Part 1, Appendix 1.5.B: Outline CoCP**, residual effects on human receptors from construction dust would be considered Not Significant.
Construction Phase Dust: Ecological Receptors	High	Large	Not Significant	It is expected that with the adoption of the control and management measures (as outlined within

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor	Magnitude of change	Significance	Summary rationale
				Volume 2, Part 1, Appendix 1.5.B: Outline CoCP, residual effects on ecological receptors from construction dust would be considered Not Significant.
Compliance Risk: Human Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	There are no Department for Environment Food and Rural Affairs (DEFRA) Pollution Climate Mapping links within the PEIR study area based on the preliminary traffic data. Further work will be undertaken at ES stage, which (on review of the final construction phase traffic data) may include air quality modelling should the relevant assessment criteria be met.
Non-Road Mobile Machinery: Human Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	At this stage there is limited detail available on the type, number, location and operational hours of Non-Road Mobile Machinery which will be required during the construction, operation and maintenance phases of the English Onshore Scheme. Review of detailed information on Non-Road Mobile Machinery would be undertaken in the ES.
Non-Road Mobile Machinery: Ecological Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	At this stage there is limited detail available on the type, number, location and operational hours of

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor	Magnitude of change	Significance	Summary rationale
				Non-Road Mobile Machinery which will be required during the construction, operation and maintenance phases of the English Onshore Scheme. Review of detailed information on Non-Road Mobile Machinery would be undertaken in the ES.
Backup Generators: Human Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	At this stage there is limited detail available on the type, number, location and operational hours of backup generators which will be required during the operation and maintenance phase of the English Onshore Scheme. Review of detailed information on backup generators would be undertaken in the ES.
Backup Generators: Ecological Receptors	High	Cannot be defined at this Stage	Cannot be defined at this Stage	At this stage there is limited detail available on the type, number, location and operational hours of backup generators which will be required during the operation and maintenance phase of the English Onshore Scheme. Review of detailed information on backup generators would be undertaken in the ES.

14.2 Relevant technical guidance

14.2.1 The legislation and planning policy which has informed the assessment of effects with respect to air quality is provided within **Volume 2, Part 1, Appendix 1.2.A: Regulatory and Planning Context**. Further information on policies relevant to the English Onshore Scheme is provided in **Volume 1, Part 1, Chapter 2: Regulatory and Policy Overview.** Relevant technical guidance, specific to air quality, that has informed this PEIR and will inform the assessment within the ES is summarised below.

Technical guidance

14.2.2 A summary of the technical guidance for air quality is given in **Table 14–2** –

Table 14–2 – Technical guidance relevant to the air quality assessment

Technical guidance document	Context
Ministry of Housing Communities and Local Government (2019). National Planning Policy Guidance (NPPG) (Ref 14.1)	Provides guidance on the relevant principals of air quality assessment; including the regulatory framework, the role of plan making, available air quality information, when assessment is required, what potential air quality issues require consideration, the level of detail required, and mitigation. The assessment follows the guidance which contains recommendations which may be relevant in undertaking air quality assessments to inform compliance with the 2024 National Planning Policy Framework (Ref 14.2) and the 2024 National Policy Statement for Energy (EN-1, Ref 14.3).
The Institute of Air Quality Management (2024) Guidance on the assessment of dust from demolition and construction (Ref 14.4)	Provides a mechanism for the assessments to consider both the magnitude of emissions and sensitivity of an area to define the level of risk of dust soiling, and human health impacts during the construction phase. Defining the unmitigated construction dust risk level for construction activities allows proportionate environmental measures to be identified and adopted. This guidance is referred to hereafter as the 'Institute of Air Quality Management construction dust guidance'.
Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality (Ref 14.5)	Applicable in assessing the effect of changes in exposure of members of the public resulting from developments. It provides guidance on how to decide whether an air quality assessment is required, how to undertake a suitable assessment of air quality impacts and whether these are to be considered significant or not, and how to identify whether additional

Technical guidance document	Context
	mitigation is required. This guidance would be used to inform the assessment methodology for the effect of construction and operational and maintenance phase vehicle emissions on human receptors. This guidance is referred to hereafter as the 'Institute of Air Quality Management development control guidance.
Institute of Air Quality Management (2020) A guide to the assessment of air quality impacts on designated nature conservation sites (Ref 14.6)	This document has been produced by the Institute of Air Quality Management to assist its members in the assessment of the air quality impacts of development on designated nature conservation sites. It may also be useful for ecologists, who use the results of air quality assessments (AQAs) to evaluate the effects of air pollution on habitats and species, by increasing their understanding of the information provided by air quality specialists. This document focuses on air quality assessments in support of Habitats Regulations Assessments (HRAs), but it's principles can be used as the basis for assessing the air quality impact ecological sites which are not subject to the Habitats Regulations. This guidance is referred to hereafter as the 'Institute of Air Quality Management guidance on the assessment of ecological sites'.
DEFRA (2022) Local Air Quality Management Technical Guidance (22) (Ref 14.7)	Provides best practice principles for the technical assessment of local air quality including the use of monitoring data, selection of receptors and verification procedure. Local Air Quality Management Technical Guidance (22) also provides guidance for the application of DEFRA tools and resources used for the technical assessment of air quality.
National Highways (2019) Design Manual for Roads and Bridges LA105 Air Quality (Ref 14.8)	Provides the relevant traffic screening criteria (as cited in Institute of Air Quality Management guidance on the assessment of ecological sites (Ref 14.6)) to evaluate requirement for assessment of designated ecological sites, and also provides methodology for any work informing a compliance risk assessment.

Air Quality Criteria

14.2.3 The Government has established a set of air quality standards and objectives to protect human health (Displayed in **Table 14–3)**. The standards and objectives are set through the Air Quality Standards Regulations (2010), Air Quality (England) Regulations (2000)

and the Air Quality (England) (Amendment) Regulations (2002).The 'standards' are set as concentrations below which adverse health effects are unlikely even in sensitive population groups, or below which risks to public health would be exceedingly small. They are based purely upon the scientific and medical evidence of the effects of an individual pollutant. The 'objectives' set out the extent to which the Government expects the standards to be achieved by a certain date.

14.2.4 **Table 14–3** presents the Air Quality Strategy (AQS) objectives for the protection of human health which are applicable to this assessment and provide context to the guidance and baseline data reported on within this chapter.

14.2.5 The air quality objectives only apply where members of the public are likely to be regularly present for the averaging time of the objective (i.e., where people will be exposed to pollutants). As detailed in Local Air Quality Management Technical Guidance (22) (Ref 14.7), the annual mean objectives apply to all locations where members of the public might be regularly exposed; these include building façades of residential properties, schools, hospitals, care homes. The 24-hour mean objective applies to all locations where the annual mean objective would apply, together with hotels and gardens of residential properties. The one hour mean objective also applies at these locations as well as at any outdoor location where a member of the public might reasonably be expected to stay for one hour or more, such as shopping streets, parks and sports grounds, as well as bus stations and railway stations that are not fully enclosed.

14.2.6 EU Directive 2008/50/EC (The European Parliament and the Council of the European Union, 2008) sets limit values for NO_2, PM_{10} and $PM_{2.5}$, and is implemented in UK law through the Air Quality Standards Regulations (2010). The limit values for NO_2 are the same numerical concentrations as the UK objectives, but achievement of these values is a national obligation rather than a local one. In the UK, only monitoring and modelling carried out by UK Government meets the specification required to assess compliance with the limit values.

Table 14–3 – Air Quality Criteria for relevant pollutants

Pollutant	Concentration (µg/m^3)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM_{10}	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year
$PM_{2.5}$	20*	Annual mean
$PM_{2.5}$ (Population Exposure Reduction Target)	N/A - 35% reduction in population exposure compared with average population exposure baseline period (2016-2018)	Long term population exposure reduction by 2040

Pollutant	Concentration (µg/m^3)	Averaging Period
$PM_{2.5}$ (Annual Mean Concentration Target)	10 – not to be exceeded at any relevant monitoring station	Annual mean – achieved by 2040

** It should be noted that the $PM_{2.5}$ objective is a target value and is not a legal requirement to be achieved by local authorities.*

14.3 Consultation and engagement

Overview

14.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 5.9** of **Chapter 5: PEIR Approach and Methodology**.

Scoping Opinion

14.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 05 September 2024. A summary of all of the relevant responses received in the Scoping Opinion in relation to air quality and confirmation of how these have been addressed within the assessment to date is presented in **Table 14–4.** There are no outstanding responses to Scoping Opinion comments in relation to air quality.

14.3.3 Since issue of the Scoping Opinion changes to the Projects design has resulted in Fenland District Council and Cambridgeshire County Council falling within the draft Order Limits. Whilst the preliminary assessment has taken account of the relevant baseline information for these local planning authorities the scope of the assessment remains unchanged.

14.3.4 The information provided in the PEIR is preliminary and not all of the Scoping Opinion comments have been addressed at this stage, however all comments will be addressed within the ES.

Table 14–4 – Summary of EIA Scoping Opinion responses for air quality

Consultee	Consideration	How addressed in this PEIR
Planning Inspectorate	Non-Road Mobile Machinery emissions during construction should be considered in the assessment.	Detailed information on the type, number, location and operational hours of Non-Road Mobile Machinery is not available at PEIR stage. This information will be acquired and assessed at ES stage. Receptors within 200 m of areas where Non-Road Mobile Machinery is expected to be sited will be identified.
	The assessment should confirm the operational vehicle types and numbers (with reference to thresholds within the guidance) to	The total vehicle movements associated with the Walpole converter stations and Walpole B substation during the operational and maintenance phase equates to

Consultee	Consideration	How addressed in this PEIR
	justify the position of scoping out operation and maintenance phase vehicle emissions assessment.	approximately 32 Annual Average Daily Traffic (AADT) flows. As the number of AADT flows does not meet the assessment threshold no further assessment is required and assessment of operational and maintenance phase vehicle emissions is scoped out of the PEIR and subsequent ES.
	Figures [drawings] should include the final study areas for each element of the air quality assessment, including the location of human and ecological receptors that have been considered.	The PEIR presents a preliminary Affected Road Network based on provisional peak construction phase (2031) traffic data in order to define a provisional air quality study area and establish the location of likely impacts and effects. The final study areas will be presented in the ES.
	The applicant should ensure that the baseline can be adequately characterised using existing air quality data.	The Applicant will ensure that there is sufficient air quality data obtained in relation to the study area to complete the air quality assessment as part of the ES. A six month air quality monitoring survey specific to the Projects will take place during Spring 2025 to ensure that any required air quality modelling at ES stage would have sufficient baseline data to undertake model verification.
Natural England	For the sections of the cable route/ landfall site options which will involve construction traffic movements within 200m of the designated sites, the potential air quality impacts due to road traffic during the construction phase will need to be considered. Ammonia emissions from road traffic could make a significant difference to nitrogen deposition close to roads and should be included within the assessment.	A preliminary construction phase study area based on the provisional traffic data available at PEIR stage has been produced for relevant ecological receptors. The air quality chapter has identified whether ecologically designated sites within 200 m of the road network provisionally screen in for assessment as per the traffic change criteria set out in National Highways DMRB LA105.

Technical engagement

14.3.5 Engagement with consultees has been primarily through the Scoping stage consultation. Technical engagement with consultees in relation to air quality is ongoing. Additional engagement with local authorities and key stakeholders to agree the scope and method of assessment will be undertaken and reported in the ES.

14.4 Data gathering methodology

Study area

14.4.1 The reporting of baseline conditions has been informed by a review of DEFRA background maps and available monitoring data within 2 km of the draft Order Limits. The 2 km area reflects industry standard / good practice and is considered appropriate in order to understand the effects from local sources such as roads and industrial processes and to gather a suitably representative baseline monitoring dataset.

14.4.2 Professional judgement (rather than a distance-based approach) has been used to identify Air Quality Management Areas (AQMAs) and DEFRA Pollution Climate Mapping (PCM) links in the vicinity of the draft Order Limits, which are potentially affected by the construction and operation and maintenance of the English Onshore Scheme.

Desk study

14.4.3 A summary of data gathered or supplied from external organisations, together with the nature of that data, is outlined in **Table 14–5.**

Table 14–5 – Data sources used to inform the air quality assessment

Organisation	Data source	Data provided
DEFRA	UK Air website 2024 (Ref 14.9)	Predicted background concentrations for NO_2, PM_{10} and $PM_{2.5}$, AQMA designated by local authorities and Pollution Climate Mapping (PCM) link information.
DEFRA	Magic.DEFRA.gov.uk website 2024 (Ref 14.10)	Locations ecological sites within and near to the draft Order Limits.
East Lindsey District Council	2024 Annual Status Report (ASR) (Ref 14.11)	Local authority monitoring data
Boston Borough Council	2024 Annual Status Report (Ref 14.12)	Local authority monitoring data
South Holland District Council	2024 Annual Status Report (Ref 14.13)	Local authority monitoring data
Borough Council of King's Lynn & West Norfolk	2024 Annual Status Report (Ref 14.14)	Local authority monitoring data
Fenland District Council	2024 Annual Status Report (Ref 14.15)	Local authority monitoring data

14.4.4 Under section 82 of Part IV of the Environment Act 1995, district councils should undertake periodic review and assessment of air quality within their area. The results of this review and assessment (including the publication of air quality monitoring data) is set out in their Annual Status Reports.

Survey work

14.4.5 To date no air quality survey work specific to the Projects has been undertaken. A dedicated NO_2 diffusion tube monitoring survey is to be undertaken in advance of the ES, to ensure there is adequate coverage of monitoring data to inform potential model verification and updated baseline conditions at ES stage. Locations and data generated by the air quality monitoring survey specific to the Projects will be provided in the ES; however, the air quality study area for construction phase vehicles presented in this PEIR is to be utilised as a means for selecting locations where road sourced impacts from the Projects are anticipated. The monitoring data will be sited, bias adjusted and annualised in accordance with the best practice principles detailed in Local Air Quality Management Technical Guidance (22) (Ref 14.7) as to ensure that the monitoring survey design and data recorded is robust.

14.5 Overall baseline

14.5.1 This section of the chapter comprises an overview of the baseline conditions for air quality, in order to establish the likely type and nature of potential effects.

Current baseline

Air Quality Management Areas and Local Authority Monitoring

14.5.2 As required by the Environment Act 1995 (Ref 14.16), the local authorities covering the study area have undertaken review and assessment of air quality within their area of jurisdiction, producing Annual Status Reports which appraise local air quality over the most recent full calendar year. This annual reporting regime informs the declaration or revocation of AQMAs, which are areas where monitoring has concluded that there are exceedances of AQS objectives (as detailed in **Table 14–3).**

14.5.3 Local authorities generally undertake and prioritise air quality monitoring in those areas where there are higher levels of exposure to higher pollutant concentrations (e.g. urban areas, transport corridors, near industrial installations). Rural areas such as those which comprise the bulk of the draft Order Limits are generally not monitored unless there is a specific reason to do so – for example a pollution hotspot such as an industrial process.

14.5.4 **Volume 2, Part 2, Appendix 2.14.B: Air Quality Monitoring** displays all the monitoring data undertaken by the local authorities covering the air quality baseline data study area between 2019 and 2023. These are also presented on **Volume 3, Part 2, Figure 14-1: Air Quality Study Area.**

East Lindsey District Council

14.5.5 A review of the most recent available Annual Status Report published by East Lindsey District Council published during 2024) (Ref 14.11) shows that only non-automatic (NO_2 diffusion tube) monitoring was undertaken in 2023. The monitoring data shows no exceedances of the AQS objectives and no AQMAs have been declared.

14.5.6 All monitoring undertaken by East Lindsey District Council is located beyond 2 km of the draft Order Limits in the urban areas of Skegness and Horncastle. As such monitored concentrations are not considered to be representative of the baseline environment in the areas expected to be affected by the English Onshore Scheme.

14.5.7 East Lindsey District Council did not monitor PM_{10} and $PM_{2.5}$ during 2023.

Boston Borough Council

14.5.8 A review of the most recent available Annual Status Report published by Boston Borough Council published during 2024 (Ref 14.12) shows that only NO_2 diffusion tube monitoring was undertaken in 2023, and that no automatic monitors were deployed. There is only one NO_2 diffusion tube monitoring site within 2 km of the draft Order Limits, which is Site 21 (36 Sleaford Road, Boston). This site is located adjacent to the A52 (Sleaford Road) in the centre of the town of Boston (~ 2 km east of the draft Order Limits). In 2023 this site measured an annual mean NO_2 concentration of 21.3 µg/m^3 which is well below the annual mean NO_2 AQS objective.

14.5.9 Boston Borough Council has one AQMA (AQMA 1 – Haven Bridge), which was declared in 2001 for exceedances of the annual mean NO_2 AQS objective. The highest monitored NO_2 concentration within this AQMA in 2023 was 40.3 µg/m^3, which exceeds the AQS objective. This concentration was monitored at the NO_2 diffusion tube site 1, which is located adjacent to the air quality monitoring station on the north side of Haven Bridge Road. This site is located 3 km east of the draft Order Limits.

14.5.10 Boston Borough Council did not monitor PM_{10} and $PM_{2.5}$ during 2023.

South Holland District Council

14.5.11 A review of the most recent Annual Status Report published by South Holland District Council (published 2024) (Ref 14.13) shows that the local authority undertook both automatic (NO_2 and PM_{10}) and NO_2 diffusion tube monitoring within their area of jurisdiction during 2023.

14.5.12 In 2023 all automatic (NO_2 and PM_{10}) and NO_2 diffusion tube monitoring sites within South Holland District Council remit measured annual mean NO_2 and PM_{10} concentrations below the AQS objectives. As such the local authority has not declared any AQMAs.

14.5.13 There are no automatic sites within 2 km of the draft Order Limits. The closest however is CM2, which is located approximately 3 km northeast of the draft Order Limits at Westmere School in suburban area of Sutton Bridge. In 2023 this site measured annual mean NO_2 and PM_{10} concentrations of 6.8 µg/m^3 and 13.4 µg/m^3, both of which are well below the respective AQS objectives.

14.5.14 Within 2 km of the draft Order Limits there are four non-automatic NO_2 diffusion tube monitoring sites, all of which monitored 2023 annual mean NO_2 concentrations below the AQS objective. The closest site to the draft Order Limits is SH4 which is located approximately 1 km west of the draft Order Limits in the suburban area of Holbeach. In 2023 this site measured an annual mean NO_2 concentration of 8.2 µg/m^3, which is well below the annual mean NO_2 AQS objective.

14.5.15 South Holland District Council did not monitor $PM_{2.5}$ during 2023.

Borough Council of King's Lynn & West Norfolk

14.5.16 Review of the 2023 Annual Status Report published by the Borough Council of King's Lynn & West Norfolk (published 2024) (Ref 14.14) shows that the local authority undertook both automatic and NO_2 diffusion tube monitoring within their area of jurisdiction during 2023.

14.5.17 In 2023 all automatic and NO_2 diffusion tube monitoring sites within Borough Council of King's Lynn & West Norfolk area of jurisdiction measured annual mean NO_2 concentrations below the AQS objective. However, Borough Council of King's Lynn & West Norfolk have two AQMAs which are yet to be revoked and are described as below:

- Gaywood Clock AQMA: Declared in 2009 for annual mean NO_2 (Located 12 km east of the draft Order Limits).
- Railway Road AQMA: Declared in 2003 for annual mean NO_2 (Located 12 km east of the draft Order Limits).

14.5.18 There is one NO_2 diffusion tube site within 2 km of the draft Order Limits. This is Site 99 (108 School Road, Wisbech) which is located adjacent to School Road in the rural area of West Walton (800 m southwest of the draft Order Limits). In 2023 this site measured an annual mean NO_2 concentration of 6.5 $\mu g/m^3$, which is well below the annual mean NO_2 AQS objective, indicating that NO_2 concentrations are at background levels in the rural areas surrounding the draft Order Limits.

14.5.19 Borough Council of King's Lynn & West Norfolk did not monitor PM_{10} or $PM_{2.5}$ in 2023.

Fenland District Council

14.5.20 Review of the most recent available Annual Status Report published by Fenland District Council (published 2024) (Ref 14.15) shows that Fenland District Council undertook NO_2 diffusion tube and automatic monitoring of NO_2, PM_{10} and $PM_{2.5}$ in 2023. There are no NO_2 diffusion tubes sites or automatic sites within 2 km of the draft Order Limits.

14.5.21 In 2023, all NO_2 diffusion tubes and the NO_2 automatic site within Fenland District Council's area of jurisdiction monitored annual mean NO_2 concentrations below the AQS objective. However, Fenland District Council has four AQMAs which were declared a number of years ago. Details of these AQMAs are outlined below:

- Wisbech AQMA No.1 (SO_2): Declared in 2001 for 15-minute mean Sulphur Dioxide (SO_2). Caused by emissions from local industrial processes.
- Wisbech AQMA No.3 (NO_2): Declared in 2001 for annual mean NO_2. Caused by emissions from local industrial processes and road/haulage vehicles associated with new developments.
- Wisbech AQMA No.2 (PM_{10}): Declared in 2001 for 24-hour mean PM_{10}. Caused by emissions from local industrial processes.
- Whittlesey AQMA No.1 (SO_2): Declared in 2006 for 15-minute mean Sulphur Dioxide (SO_2). Caused by emissions from local industrial processes.

14.5.22 Fenland District Council are reviewing all AQMAs in balance with assessing the likely impacts new developments will have in the district. They will revoke the AQMAs where

not relevant but in light of new planning applications and permitted developments in the area, review is being undertaken to determine if a variation of the AQMAs would be a more appropriate option.

14.5.23 The closest NO_2 diffusion tube site is S13, which is located approximately 3 km south of the draft Order Limits, near the B198 (Lynn Road) in the urban area of Wisbech. In 2023 this site measured an annual mean NO_2 concentration of 24.0 $\mu g/m^3$, which is well below the annual mean NO_2 AQS objective of 40 $\mu g/m^3$.

14.5.24 The closest automatic site to the draft Order Limits is FEN001 (Hallcroft Road, Whittlesey), which is located 27 km southwest of the draft Order Limits, and therefore would not be considered representative of air quality in the vicinity of the draft Order Limits.

DEFRA Modelled Background Pollutant Concentrations

14.5.25 The character of the area within the draft Order Limits is largely rural with some suburban areas such as Ingleborough, Tydd St Mary, Kirton End and Hubbert's Bridge. Due to the low density of air pollutant sources in rural and suburban areas, background pollutant concentrations are generally observed to be very low, and well below the relevant AQS objectives.

14.5.26 A review of the available modelled background concentrations within the draft Order Limits plus a 2 km buffer has been carried out using DEFRA predicted (modelled) annual mean background concentrations provided in 1 km x 1 km grid squares (Ref 14.9). **Table 14–6** summarises the minimum, maximum and average background concentrations for NO_2, PM_{10} and $PM_{2.5}$ across the draft Order Limits and surrounding area for the current year (2025).

Table 14–6 – Summary of DEFRA 2025 modelled Background Pollutant Concentrations across the draft Order Limits and surrounding area (within 2 km)

	Predicted background concentration for 2025 ($\mu g/m^3$)		
	NO_2	**PM_{10}**	**$PM_{2.5}$**
Annual Mean AQS Objective	40	40	20
Minimum	4.9	9.0	5.1
Maximum	7.4	14.3	7.2
Average	5.5	12.9	5.8

14.5.27 The maximum predicted 2025 background NO_2 concentration is located between Fleet Hargate and Gedney Dyke (2 km northeast of the draft Order Limits).

14.5.28 The maximum predicted 2025 background PM_{10} concentration is located near the A17 (south of Wigtoft). This is situated 3 km west of the draft Order Limits.

14.5.29 The maximum predicted 2025 background $PM_{2.5}$ concentration is located 150 m from the A16 (south of Sutterton Dowdyke). This is situated 1.7 km west of the draft Order Limits.

14.5.30 **Table 14–6** above indicates that background pollutant concentrations around the draft Order Limits and surrounding area are low, which is consistent with the largely rural nature of the location. When compared to the AQS objectives (as presented in **Table 14–3**, the background pollutant concentrations are very low.

Compliance with UK Limit Values

14.5.31 DEFRA assesses and reports to the Secretary of State on the status of air quality in the UK, by reference to the Government's Limit Values.

14.5.32 The assessment of compliance with the Government's Limit Values is undertaken using both monitoring (DEFRA's Automatic Urban and Rural [monitoring] Network (AURN)) and modelling from DEFRA's PCM model. PCM is a collection of models designed to fulfil part of the UK's statutory reporting requirements. PCM consists of one model per pollutant and models background concentrations on a 1 km^2 scale plus around 9,000 representative roadside values – some of these roads (known as 'PCM links' are located in the vicinity of the draft Order Limits.

14.5.33 For the purposes of DEFRA's compliance assessment and reporting, the UK is divided into 43 zones and agglomerations; there are 28 agglomeration zones (large urban areas) and 15 non-agglomeration zones. A zone can only become compliant when monitoring and modelling locations throughout that zone meet the relevant Limit Values. The English Onshore Scheme intersects the Eastern, and East Midlands zones. Both of these zones are currently compliant for each relevant pollutant (NO_2, PM_{10} and $PM_{2.5}$) as per the most recent DEFRA Air Pollution in the UK 2023 - Compliance Assessment Summary (2024) (Ref 14.17).

14.5.34 National Highways DMRB LA105 Guidance (Ref 14.8) provides the methodology for establishing whether a project which leads to a change in traffic flow can adversely affect the UK's ability to comply with the Limit Values in the shortest possible timescales. Those roads which form the Affected Road Network (as per the traffic change criteria detailed in National Highways DMRB LA105) which overlap with DEFRA PCM links should be assessed to establish whether a project represents a risk to compliance with the Limit Values.

14.5.35 Any PCM links that fall in the provisional PEIR construction phase vehicle emissions study area have therefore been included in the baseline reporting. These are presented on **Volume 3, Part 2, Figure 14-1: Air Quality Study Area** and are;

- A52 (Sleaford Road) in Boston town centre (1 km east of the draft Order Limits) – Census ID: 802047946;
- A16 (John Adams Way) in Boston town centre (3 km east of the draft Order Limits) – Census ID: 802016212; and
- A16 (Spilsby Road) in Boston town centre (4 km east of the draft Order Limits) – Census ID: 802046228.

14.5.36 The predicted 2025 annual mean NO_2 concentrations for the above links are well below the Limit Value of 40 µg/m^3. The predicted 2025 annual PM_{10} and $PM_{2.5}$ concentrations are also well below the respective Limit Values of 40 µg/m^3 and 20 µg/m^3.

14.5.37 No PCM links fall within the draft Order Limits.

14.5.38 In the ES the scope of the compliance risk may differ from the PCM links above depending on the final traffic dataset provided.

Future baseline

14.5.39 Background pollutant concentrations are predicted to decrease in future years, as evidenced by trends observed from local authority monitoring data and future predicted DEFRA background map concentrations; however, the rate of decrease has slowed in recent years and is generally slower in rural areas where non-traffic sources are more prominent.

14.5.40 Traffic emissions from roads in the vicinity of the English Onshore Scheme will contribute to baseline air pollutant concentrations now and in the future. While vehicle numbers are likely to increase, vehicle emissions per vehicle are predicted to decrease over time due to new technology, increasingly stringent emission regulations and cleaner fuel formulations. **Volume 1, Part 2, Chapter 12: Traffic and Transport** provides further information on how the provisional PEIR stage traffic data used in this assessment has been calculated to represent improvements in emissions and future growth.

14.5.41 Consented or proposed developments which are later consented in the surrounding area may increase traffic flows in the vicinity of the English Onshore Scheme. This may therefore result in localised increases in air pollutant concentrations as compared to the existing baseline. In addition, construction of any consented or proposed developments may result in a temporary increase in particulate concentrations as a result of fugitive dust emissions during construction works, however experience demonstrates that cumulative dust impacts can be minimised or eliminated if sufficient dust management strategies and controls are implemented by each development.

14.5.42 The potential for cumulative effects will be considered according to the approach outlined within **Volume 1, Part 4, Chapter 28: Cumulative Effects**. A cumulative assessment to consider consented developments will be undertaken at ES stage when cumulative traffic data is available.

14.5.43 Future year background pollutant data for the grid squares within 2 km of the draft Order Limits were downloaded from the DEFRA website (Ref 14.9). **Table 14–7** summarises the minimum, maximum and average background concentrations for NO_2, PM_{10} and $PM_{2.5}$ across the draft Order Limits and surrounding area for 2031 (construction peak year).

Table 14–7 - Summary of the DEFRA 2031 modelled Background Pollutant Concentrations across the draft Order Limits and surrounding area (within 2 km)

	Predicted background concentration for 2031 (µg/m^3)		
	NO_2	PM_{10}	$PM_{2.5}$
Annual Mean AQS Objective	40	40	20
Minimum	4.1	8.5	4.7
Maximum (Grid Square X, Y coordinate)	6.7	13.9	6.7
Average	4.6	12.4	5.4

14.5.44 In summary, **Table 14–7** indicates that:

- The maximum predicted 2031 background NO_2 concentration is located between Fleet Hargate and Gedney Dyke (2 km northeast of the draft Order Limits);
- The maximum predicted 2031 background PM_{10} concentration is located near the A17 (south of Wigtoft). This is situated 3 km west of the draft Order Limits; and
- The maximum predicted 2031 background $PM_{2.5}$ concentration is located along Station Rd, Sutterton, which is situated 900 m west of the draft Order Limits.

14.5.45 **Table 14–7** above indicates that future background pollutant concentrations in 2031 around the draft Order Limits and surrounding area are low, which is consistent with the rural nature of the location. When compared to the AQS objectives (as presented in **Table 14–3**, the background pollutant concentrations are very low.

14.6 Environmental measures

14.6.1 As set out in **Volume 1, Part 1, Chapter 5: PEIR Approach and Methodology**, the environmental measures are characterised as design measures or control and management measures. A range of environmental measures would be implemented as part of the English Onshore Scheme and will be secured in the DCO as relevant.

14.6.2 **Table 14–8** outlines how these design and control measures will influence the air quality assessment. In addition to the measures listed in **Table 14–8,** standard environmental measures, comprising management activities and techniques, would be implemented during the construction of the Projects to limit effects through adherence to good site practices and achieving legal compliance. These are listed in **Volume 2, Appendix 1.5.B: Outline CoCP** and are not repeated below.

14.6.3 Measures listed in **Table 14–8** have been assigned references, for example (GG01). These align with the references provided in **Volume 2, Part 1, Appendix 1.5.B: Outline CoCP** for ease of cross-reference.

14.6.4 At this stage there are no anticipated environmental measures provided for the assessment of the operational and maintenance phase of the development as there is an insufficient level of data in order to screen out or quantify air quality effects, meaning that the level of environmental measures required cannot yet be determined. However, the scale and nature of the operational and maintenance phase activities associated with the English Onshore Scheme is not anticipated to lead to significant effects on air quality. The requirement for environmental measures will be reviewed in the lead up to the ES following stakeholder consultation feedback, further design refinement and further assessment. Any measures identified will be detailed in the ES.

Table 14–8 – Summary of the anticipated environmental measures

Receptor	Potential changes and effects	Embedded measures	ID reference
Construction			
Human and/or ecological receptors within 200 m of the ARN.	Increases in pollutant concentrations from vehicles associated with the Projects.	Sensitive routeing of construction vehicles to avoid sensitive receptors where practicable.	AQ01
Human receptors within 250 m of the draft Order Limits, ecological receptors within 50m of construction vehicle routes.	Dust deposition and health impacts from elevated PM concentrations.	A range of measures will be adopted throughout the duration of the construction phase of the English Onshore Scheme. Measures relevant to air quality have been defined in the construction dust risk assessment. Environmental measures based on the calculated dust risk for the English Onshore Scheme is presented in **Volume 2, Part 2, Appendix 2.14.A Construction Dust Assessment and Methodology** This would be updated at ES stage based on the final design.	AQ02-AQ09
Design and Operation			
N/A as design and operational effects have been scoped out of the assessment.			

14.7 Scope of the assessment

Spatial scope and study area

14.7.1 The spatial scope of the assessment of air quality covers the area of the English Onshore Scheme contained within the draft Order Limits, together with the study areas described below. The study areas for air quality are shown on **Volume 3, Part 2, Figure 14-1: Air Quality Study Area.**

Construction Phase Dust Assessment

14.7.2 The Institute of Air Quality Management construction dust guidance (Ref 14.4), recommends the following study area for construction phase dust:

- Up to 250 m from the draft Order Limits for human receptors and up to 50 m for ecological receptors.
- Up to 50 m from the route(s) used by construction vehicles, up to a distance of 250 m along the highway from the proposed bellmouths.

14.7.3 Natural England raised concerns with the Grimsby to Walpole Project that the 50 m construction dust study area for ecological receptors advocated in the Institute of Air Quality Management construction dust guidance was too limited. Following this feedback and collaborative meetings with the Grimsby to Walpole Project to seek consistency of adopted approaches, the study area for construction phase dust for the English Onshore Scheme is as follows:

- Up to 250 m from the draft Order Limits for human receptors and up to 200 m from the draft Order Limits for ecological receptors.
- For human receptors - Up to 50 m from the route(s) used by construction vehicles on the public highway, up to 250 m from the proposed bellmouths.
- For ecological receptors - Up to 200 m from the route(s) used by construction vehicles on the public highway, up to 250 m from the proposed bellmouths.

14.7.4 Ecological designated sites and sensitive receptors (e.g. residential properties, hospitals, schools and care homes) within the above criteria form the study area.

Construction Phase Vehicle Emissions: Human Receptors

14.7.5 The Institute of Air Quality Management development control guidance (Ref 14.5) details its own indicative traffic flow change criteria that, if met on a given road, may highlight the need for an assessment. The screening criteria for vehicle emissions assessment is as follows:

- A change in Light Duty Vehicle (LDV, <3.5 tonnes) flows of >100 AADT within or adjacent to an AQMA, or >500 AADT elsewhere.
- A change in Heavy Duty Vehicle (HDV, ≥3.5 tonnes) flows of >25 AADT within or adjacent to an AQMA, or >100 AADT elsewhere.
- Where a road is realigned by 5 m or more and is within an AQMA.
- Where a junction is added or removed close to existing receptors.
- Where there are one or more substantial combustion processes where there is a risk of impacts at relevant receptors.

14.7.6 Roads which meet the criteria above are referred to as the ‘Human Receptor Affected Road Network’. Human sensitive receptors (e.g. residential properties, hospitals, schools and care homes) within 200 m of any traffic links that meet the above traffic screening criteria, are therefore part of the study area. These are assessed in a proportionate manner; those receptors closest to the roads comprising the study area and/or those receptors in existing areas of poor air quality are assessed as representative receptors.

14.7.7 In addition to human sensitive receptors, local authority monitoring data within 200 m of any traffic links that meet the above Institute of Air Quality Management traffic screening criteria, are included as part of the study area.

Construction Phase Vehicle Emissions: Ecological Receptors

14.7.8 Effects from vehicle emissions on ecological receptors are screened in if the flow change criteria set in National Highways DMRB LA105 Guidance (Ref 14.8) are met. Roads which meet any of the criteria below are collectively referred to as the Affected Road Network. The guidance states relevant designated sites of ecological importance within 200 m of roads meeting one or more of the following criteria should be assessed:

- A change in traffic flows ≥ 1,000 vehicles per day.
- A change in HDV flows of ≥ 200 vehicles per day.
- A change in speed band.
- A change in carriageway alignment by ≥ 5 m.

14.7.9 Roads which meet the criteria above are referred to as the 'Ecological Receptor Affected Road Network'. Ecological sites sensitive to impacts from air pollutants which fall within 200 m of roads meeting these criteria are assessed as part of the study area. As the traffic data provided at PEIR stage is provisional and will be superseded at ES stage, only those ecological sites which have statutory designations (i.e. internationally or nationally designated) are identified in the subsequent sections of this chapter:

- Special Protection Areas (SPA);
- Special Areas of Conservation (SAC);
- Ramsar Sites; and
- Sites of Special Scientific Interest (SSSI).

14.7.10 Sites with non-statutory local ecological designations such as Local Wildlife Sites and Local Nature Reserves would be reviewed and assessed subject to screening at ES stage.

Compliance Risk Assessment

14.7.11 The requirement to undertake a compliance risk assessment is evaluated in accordance with the National Highways DMRB LA105 Guidance. Assessment is carried out on those roads which both meet the National Highways DMRB LA105 Guidance traffic change criteria (the same as cited for ecological effects, described above) and intersect those roads forming DEFRA's PCM model. The roads where these two datasets overlap is referred to as the 'Construction Risk Road Network'.

14.7.12 The compliance risk study area encompasses qualifying features (such as footpaths, residential properties and schools) which lie within 15 m of where the two road networks intersect.

Non-Road Mobile Machinery & Substation back-up diesel generators

14.7.13 No specific guidance exists on the definition of a study area for Non-Road Mobile Machinery sources due to the large variation in the area of potential impact from

different types of sources. For the purposes of this assessment a study area of up to 200 m radius from likely long-term locations of Non-Road Mobile Machinery is considered appropriate given the size and temporary nature of the operations. This approach is consistent with the approach adopted for Non-Road Mobile Machinery on other NGET projects such as the Sea Link PEIR (Ref 14.18). Beyond this distance it is judged that the effect of any emissions on local air quality would not be significant.

14.7.14 Given the uncertainty of the locations of Non-Road Mobile Machinery within the draft Order Limits at this stage, the study area has been defined as within 200 m of the indicative zone for construction compounds. It is expected that use of Non-Road Mobile Machinery along the indicative zone for underground cable assets would be transient and occur for sporadic periods at differing locations within the draft Order Limits throughout the temporary construction stage.

14.7.15 As with Non-Road Mobile Machinery, no specific guidance exists on the definition for a study area for generators. For the purposes of this assessment a study area of up to 200 m radius from the proposed generator/s is considered appropriate. Beyond this distance it is judged that the effect of any emissions on local air quality would not be significant. Given the uncertainty of the location of the back-up generators at this stage, the study area has been defined as within 200 m of the Walpole B Substation and the indicative zone for converter stations. The indicative zone for converter stations covers Options A-D as displayed on **Volume 3, Part 1, Figures 4-1 to 4-4**.

Temporal scope

14.7.16 The temporal scope of the assessment of air quality is consistent with the period over which the construction of the English Onshore Scheme would be carried out. It covers the construction period (2028 to 2035) and 2035 onwards (operational and maintenance).

14.7.17 The English Onshore Scheme is expected to have a life span of more than 40 years. If decommissioning is required at this point in time, then activities and effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works, albeit with a lesser duration of two years. Acknowledging the complexities of completing a detailed assessment for decommissioning works up to 40 years in the future, it is considered that the significance of effects relating to the decommissioning phase would be no greater than those from the construction phase and decommissioning effects are not discussed in detail in this chapter; however, **Table 4.21** in **Volume 1, Part 1, Chapter 4: Description of the Projects** provides a high level summary assessment of the likely significant effects associated with decommissioning. Furthermore, should decommissioning take place it is expected that an assessment in accordance with the legislation and guidance at the time of decommissioning would be undertaken.

Identification of receptors

14.7.18 The principal air quality receptors that have been identified as being subject to potential significant effects are summarised in **Table 14–9**.

Table 14–9 – Air quality receptors subject to potential effects

Receptor	Reason for consideration
Construction phase dust emissions: Human and ecological receptors	There is potential for these receptors to be affected by dust deposition and health impacts from elevated PM concentrations during the construction phase of the English Onshore Scheme.
Construction phase vehicle emissions: Human receptors	There is potential for increases in NO_2, PM_{10} and $PM_{2.5}$ concentrations from vehicle emissions to affect these receptors during the construction phase of the English Onshore Scheme.
Construction phase vehicle emissions: Ecological receptors	There is potential for increases in NO_x and NH_3 concentrations and nitrogen deposition rates from vehicle emissions to affect these receptors during the construction phases of the English Onshore Scheme.
Construction phase emissions from Non-Road Mobile Machinery: Human and ecological receptors	There is potential for increases in local air pollutant concentrations from Non-Road Mobile Machinery point source emissions to affect these receptors during the construction phase of the English Onshore Scheme. For ecological receptors, this can lead to increases in nitrogen deposition which can affect site integrity.
Operational and maintenance phase emissions from diesel back-up generator locations at the Walpole B Substation and indicative zone for converter stations: Human and ecological receptors	There is potential for increases in pollutant concentrations from back-up generators to affect these receptors during the operational and maintenance phase of the English Onshore Scheme. For ecological receptors, this can lead to increases in nitrogen deposition which can affect site integrity.

14.7.19 The principal air quality receptors that have been identified as being subject to potential significant effects from fugitive dust emissions during the construction phase are shown in **Volume 3, Part 2, Figure 14-2: Construction Dust Assessment Study Area.**

Potential effects considered within this assessment

14.7.20 The air quality receptors that have the potential to be significantly affected and have been taken forward for subsequent assessment are summarised in **Table 14–10**.

Table 14–10 – Air quality receptors scoped in for further assessment

Receptor	Likely significant effects
Construction phase dust emissions: Human and ecological receptors	There is the potential for significant effects from dust deposition and health impacts from elevated PM concentrations, caused by construction activities if standard measures are not adopted or if the measures suggested in **Table 14–8** are not stringent enough to the risk level that is established. There is the potential for significant effects on ecological function of a designated site caused by construction activities if standard measures are not adopted or if the measures suggested in **Table 14–8** are not stringent enough to the risk level that is established. A construction Dust Risk Assessment based on the information available at PEIR stage is therefore presented in **Volume 2, Part 2, Appendix 2.14.A: Construction Dust Assessment and Methodology** in order to define risk level and inform the selection of environmental measures which will form part of the Outline CoCP, submitted in support of the DCO application.
Construction phase vehicle emissions: Human receptors	There is the potential for significant effects from increases in local air pollutant concentrations from vehicle emissions during the construction phase, should screening of construction traffic flows show vehicle trips exceed the Institute of Air Quality Management criteria. The PEIR stage construction vehicle data is provisional and is to be finalised at ES stage. Therefore, the assessment at PEIR stage is preliminary. The spatial scope and study area section, provides a commentary on the areas which meet the criteria for detailed assessment and the relevant receptors considered.
Construction phase vehicle emissions: Ecological receptors	There is the potential for significant effects from increases in local air pollutant concentrations and nitrogen deposition rates from vehicle emissions during the construction phase, should screening of construction traffic flows show vehicle trips exceed the National Highways DMRB LA105 Guidance criteria.

Receptor	Likely significant effects
	The PEIR stage construction vehicle data is provisional and is to be finalised at ES stage. Therefore, the assessment at PEIR stage is preliminary. The spatial scope and study area section provides a commentary on the areas which meet the National Highways DRMB LA105 criteria for detailed assessment and the relevant ecological receptors with statutory designations which are located in the air quality study area.
Construction phase emissions from Non-Road Mobile Machinery: Human and ecological receptors	There is the potential for significant effects from increases in local air pollutant concentrations and nitrogen deposition rates from Non-Road Mobile Machinery emissions during the construction phase of the English Onshore Scheme. This would be reviewed again in the ES when the construction design is more mature and there is greater confidence of the location, type and operating regime of any Non-Road Mobile Machinery.
Operational and maintenance phase emissions from diesel back-up generator locations at the Walpole B Substation and indicative zone for converter stations: Human receptors	There is the potential for significant effects from increases in local air pollutant concentrations from back-up generator emissions during the operational phase of the English Onshore Scheme. This would be reviewed in the ES based on detailed information on the location, type and testing regime of the selected back-up generators.

14.7.21 The receptors/effects detailed in **Table 14–11** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant. Assessment of operational and maintenance phase vehicle emissions has been scoped out of the PEIR and ES.

Table 14–11 – Summary of effects scoped out of the air quality assessment

Receptors/potential effects	Justification
Operational and maintenance phase vehicle emissions: Human and ecological receptors	The total vehicle movements associated with the Walpole converter stations and Walpole B substation during the operational and maintenance phase equates to approximately 32 Annual Average Daily Traffic (AADT) flows. These vehicle flows are below the Institute of Air Quality Management and National Highways DMRB LA105 screening criteria. As

Receptors/potential effects	Justification
	the number of AADT flows does not meet the assessment threshold no further assessment is required and the assessment of operational and maintenance phase vehicle emissions is scoped out of the PEIR and subsequent ES.
Operational and maintenance phase emissions from diesel back-up generator locations at the Walpole B Substation and indicative zone for converter stations: Ecological receptors	There are no ecological sites with statutory designations within 200 m of the indicative zone for converter stations or Walpole B Substation locations. This position would be reviewed in the ES once the indicative zone for converter stations and Walpole B Substation have been defined. It is likely that these would definitively scope out at ES stage.

14.8 Key parameters for assessment

Realistic worst-case design scenario

14.8.1 The assessment has followed the Rochdale Envelope approach as outlined in **Volume 1, Part 1, Chapter 4: Description of the Projects** and **Volume 1, Part 1, Chapter 5: PEIR Approach and Methodology of the PEIR.** The assessment of effects has been based on the description of the Projects and parameters outlined in **Volume 1, Part 1, Chapter 4: Description of the Projects**. However, where there is uncertainty regarding a particular design parameter, the realistic worst-case design parameters are provided below with regards to air quality along with the reasons why these parameters are considered worst-case. The preliminary assessment for air quality has been undertaken on this basis. Effects of greater adverse significance are not likely to arise should any other development scenario, based on details within the Rochdale Envelope (e.g., different infrastructure layout within the draft Order Limits), to that assessed here be taken forward in the final design of the English Onshore Scheme.

14.8.2 In relation to air quality the following assumptions are made regarding the English Onshore Scheme design parameters in order to ensure a realistic worst-case assessment has been undertaken.

- With regards to construction activities leading to construction dust emissions it is assumed that these could take place anywhere within the draft Order Limits, including at the edge of the draft Order Limits. This is considered to be worst case as it reflects the shortest distance to the nearest sensitive receptors.
- The Walpole converter stations and Walpole B Substation would be constructed concurrently. This is considered to be worst case as it accounts for potential cumulative construction impacts from construction activities and construction vehicles associated with both the construction of the Walpole B Substation and Walpole converter stations.
- As set out in **Section 4.4** of **Volume 1, Part 1, Chapter 4: Description of the Projects**, at this stage in the design process, four options have been identified with

regards to the proposed siting of the Walpole converter stations. All four options (Options A-D) have been included within the baseline study. With regards to the indicative zone for converter station options A-D, the siting of these is considered to be inconsequential in relation to air quality at PEIR stage. This is because the construction dust risk assessment undertaken has already identified that high risk control measures are required, based on scale of construction activities required to construct the Projects. For construction phase vehicle emissions, the traffic data which has been analysed assumes that the same bellmouths would be used for access regardless of the indicative zone for converter station siting options and therefore does not influence the preliminary assessment for the construction phase vehicle air quality study area. Therefore **Section 14.11** has not made reference to the specific options.

- The construction phase vehicle flows have been based on the anticipated peak construction year of 2031; the year where the construction of the English Onshore Scheme requires the greatest number of vehicle flows. These flows have been used to inform the construction phase vehicle emissions study area for ecological and human receptors. This data includes traffic flows generated by the Grimsby to Walpole Project in the vicinity of the indicative zone for converter stations and Walpole B Substation.
- The routeing of the construction phase vehicle flows is preliminary and it is envisaged that options for alternative routeing of construction phase vehicles would be explored prior to ES stage to avoid sensitive receptors.
- It has been assumed that construction phase Non-Road Mobile Machinery emissions would occur at the boundary of the indicative zone for construction compounds, owing to uncertainty and lack of information regarding the actual position during the construction phase. It is assumed that emissions from construction phase Non-Road Mobile Machinery and operational and maintenance phase emergency back-up diesel generators would be temporary and transient in nature and as such impacts and significance are deemed to be negligible. However, this will be confirmed in the ES once further information is available.
- Given the uncertainty of the location of the operational and maintenance phase emergency diesel generators at this stage, the study area has been defined as 200 m from the Walpole B Substation and the indicative zone for converter station option A, B, C and D locations.

Consideration of construction scenarios

14.8.3 As detailed in **Volume 1, Part 1, Chapter 4: Description of the Projects**, the timing of construction activities set out within this PEIR is indicative. It has been identified that elements of the Projects could be constructed sequentially or concurrently.

14.8.4 It has been identified that elements of the Projects could be constructed concurrently including civils works (e.g. indicative zone for construction compounds, haul roads) and works at the landfall or sequentially. Given that the previously described environmental measures associated with construction would be in place until commission and testing was complete, effects relating to construction dust risk are anticipated to be materially the same whether elements of the Projects were constructed concurrently or sequentially.

14.8.5 In relation the emissions from construction phase traffic, the peak traffic year of 2031 assumes a concurrent build out of the English Onshore Scheme.

Considerations for operational and maintenance phase

14.8.6 During the operational (and maintenance) phase the Walpole converter stations would be operated by a small team (6-8 staff) and maintenance would be limited to routine activities. Occasional HGV and AIL access would be required. Assuming all Walpole converter station staff drive this equates to a 16 LGV trips per day (8 arrivals, 8 departures) per site this equates to 32 trips per day (16 arrivals, 16 departures) in total, plus occasional maintenance vehicles and visitors.

14.8.7 The Walpole B Substation is not expected to be manned, therefore the operational traffic flows would comprise vehicles associated with routine visits and fault maintenance only. It is anticipated that there will be two visits per month by two people. Assuming the substation visitors drive this equates to 4 trips per month (2 arrivals, 2 departures).

14.8.8 In total the Walpole converter station sites and Walpole B Substation are forecast to generate 36 trips (18 arrivals, 18 departures). In relation to the inspection and maintenance of the indicative cable route, vehicle movements would be limited to maintenance and staff vehicles.

14.8.9 The total vehicle movements equate to approximately 32 AADT associated with the Walpole converter stations and Walpole B substation during the operational (and maintenance phase). On the basis of this information no likely significant effects are expected. Therefore, as set out in the EIA Scoping Report, the operational (and maintenance) phase is scoped out of the PEIR and subsequent ES.

14.9 Assessment methodology

Overview

14.9.1 The generic project-wide approach to the assessment methodology is set out in **Volume 1, Part 1, Chapter 5: PIER Approach and Methodology**, and specifically in **Sections 5.4** to **5.6**. However, whilst this has informed the approach that has been used in this air quality assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this air quality assessment.

Construction Dust Assessment

14.9.2 During the construction phase of the English Onshore Scheme there is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined in the Institute of Air Quality Management construction dust guidance (Ref 14.4). The methodology is summarised in the following paragraphs and detailed assessment steps are presented in **Volume 2, Part 2, Appendix 2.14.A Construction Dust Assessment and Methodology**.

14.9.3 There is also the potential for fugitive dust emissions during the decommissioning phase. Details regarding decommissioning phase activities are limited and a detailed

assessment has not been undertaken. However, the potential effects on air quality associated with the decommissioning phase are considered to be no greater to those risks identified during the construction phase. As such, the assessment undertaken for construction dust is considered applicable in relation to decommissioning. **Table 4.21** in **Volume 1, Part 1, Chapter 4: Description of the Projects** provides a high level summary assessment of the likely significant effects associated with decommissioning.

Outline of method

14.9.4 The Institute of Air Quality Management guidance places an emphasis on the application of professional judgement based on available evidence. It prompts the practitioner to evaluate the unmitigated dust emission magnitude for construction, demolition, trackout and earthworks associated with a given development, tying this to the sensitivity of the area being assessed. This allows dust risk for each activity to be determined; these risk levels are then used as the basis for informing proportionate environmental measures which are to be adopted throughout the construction period.

Receptor sensitivity/value

14.9.5 The sensitivity of the area to dust impacts can be defined as low, medium, or high sensitivity, in accordance with Institute of Air Quality Management construction dust guidance (Ref 14.4).

14.9.6 The Institute of Air Quality Management construction dust guidance (Ref. 14.2) defines a human receptor as “any location where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM over a time period relevant to the air quality objectives”, as defined in Local Air Quality Management Technical Guidance (22) (Ref 14.7). In terms of annoyance effects, this will most commonly relate to dwellings, but may also refer to other premises such as buildings housing cultural heritage collections (e.g. museums and galleries), vehicle showrooms, food manufacturers, electronics manufacturers, amenity areas and horticultural operations (e.g. salad or soft-fruit production).

14.9.7 An ecological receptor is defined as “any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats)”. However, in this PEIR, this includes ecological sites with a statutory designation (i.e. sites with an international or national designation) – SSSI, SPA, SAC and Ramsar sites.

14.9.8 The influencing factors to define receptor sensitivity to dust impacts are as follows:

- High – where human receptors are expected to be present continuously for extended periods of time e.g. residential properties, hospitals, schools and care homes. Internationally or nationally designated ecological sites.
- Medium – where users would expect to enjoy a reasonable level of amenity and value could be diminished by dust soiling e.g. parks and places of work. Nationally designated ecological sites.
- Low – where enjoyment of amenity would not reasonably be expected and exposure would be for limited periods e.g. footpaths, shopping streets and car parks. Locally designated ecological sites.

Magnitude of impact

14.9.9 The scale and nature of the works determines the magnitude of dust arising as small, medium or large.

14.9.10 The relevant criteria to define the potential magnitude of dust emissions includes the factors listed below for each level of magnitude. Professional judgment should be applied to establish the dust emissions magnitude:

- Small – demolition volume under 12,000 m^3, demolition activities less than 6 m above ground level, total site area less than 18,000 m^2, soil type with large grain size, total building volume less than 12,000 m^3, construction material with low potential for dust release, less than 20 HDV trips per day, unpaved road length less than 50 m.
- Medium – demolition volume 12,000 m^3 - 75,000 m^3, demolition activities between 6 m – 12 m above ground level, total site area 18,000 m^2 – 110,000 m^2, moderately dusty soil type, potentially dusty construction material, total building volume 12,000 m^3 - 75,000 m^3, 20 to 50 HDV trips per day, unpaved road length 50 – 100 m.
- Large – on-site crushing and screening, demolition volume greater than 75,000 m^3, demolition activities greater than 12 m above ground level, total site area greater than 110,000 m^2, more than 10 heavy earth moving vehicles active at any one-time, total building volume greater than 75,000 m^3, on site concrete batching, sandblasting, more than 50 HDV trips per day, unpaved road length greater than 100 m.

Significance of effect

14.9.11 The Institute of Air Quality Management construction dust guidance categorises the unmitigated risk of dust impacts on human health and amenity (rather than ascribe a significance of effect) as a means of identifying the level of dust emissions mitigation required to ensure that residual effects are 'not significant'. The dust risk rating is based upon the magnitude of dust from construction activities and the sensitivity of the receiving environment. A higher dust risk rating requires more stringent environmental measures to limit or eliminate residual effects. The risk of dust impact categories is presented in **Volume 2, Part 2, Appendix 2.14.A Construction Dust Assessment and Methodology.** A higher dust risk rating requires more stringent environmental measures to limit or eliminate residual effects.

14.9.12 The application of control and management measures within the Outline CoCP (**Volume 2, Part 1, Appendix 1.5.B: Outline CoCP**), to be submitted in support of the DCO application, would be applied in a proportionate manner based on the risk criteria set out in the Institute of Air Quality Management guidance. For example, in areas where there are no receptors within 250 m of works there would be a much lower risk from dust impacts and as such the mitigation would be applied in a suitable manner based on risk.

Construction Phase Vehicle Emissions Assessment

14.9.13 At this stage, projected construction traffic flows are preliminary, limited in geographical extent, and will be subject to further change as the design evolves before it is finalised. As such analysis of the air quality impact from construction phase vehicle emissions was limited to calculating the likely air quality study area as a means of informing those

areas which are likely to be affected by vehicle emissions in the construction phase and as means of inputting into future design decisions. The construction phase traffic data has been screened against the screening criteria for each type of receptor:

- Effects on human receptors – Institute of Air Quality Management development control guidance screening criteria (Ref 14.5);
- Effects on ecological receptors – National Highways DMRB LA105 Guidance traffic screening criteria (Ref 14.8); and
- Assessment of compliance risk – National Highways DMRB LA105 Guidance traffic screening criteria (Ref 14.8).

14.9.14 With the application of the screening criteria to the relevant receptors it is possible to establish the likely study areas for effects on human receptors, ecological receptors and to establish if there is likely to be a requirement to assess compliance risk. The Affected Road Networks and study areas are displayed in **Volume 3, Part 2, Figure 14-1: Air Quality Study Area** and discussed in **Section 14.11**.

Non-Road Mobile Machinery/Emergency Generators

14.9.15 Generators and Non-Road Mobile Machinery have not been assessed in detail or quantified owing to the lack of details regarding locations, type, operating regimes at this preliminary stage. The study area for Non-Road Mobile Machinery has been defined as a 200 m buffer around the indicative zone for construction compounds. It is expected that use of Non-Road Mobile Machinery along the length of the indicative zone for underground cable assets would be transient and occur for sporadic periods at differing locations within the draft Order Limits throughout the temporary construction stage. It is considered that emitted pollutants would not occur over a sufficiently prolonged duration to have a material effect on rates of pollutant concentrations. It is assumed generator effects would be sufficiently mitigated by measures including, but not limited to, locating away from sensitive receptors, increasing the release height of emissions for sufficient dispersion, and application of relevant emissions abatement technology. As stated previously, receptors which may be affected by operational and maintenance emissions from emergency diesel generators have been appraised in the study area defined as 200 m from the Walpole B Substation and the indicative zone for converter stations. Assessment of Non-Road Mobile Machinery and emergency generators would be reviewed at the ES stage once detailed information becomes available.

14.10 Preliminary assessment of cumulative effects

14.10.1 At the current stage of the Projects (PEIR stage) for the Projects, design information is insufficient to allow for a robust cumulative assessment to be undertaken. Furthermore, given the current position in relation to baseline data collection, with much of the environmental surveys still to be undertaken during 2025, the baseline identified at this PEIR stage cannot be taken as a complete picture of the potential presence and significance of sensitive receptors. Therefore, a cumulative assessment has not been undertaken at this stage; however, **Volume 1, Part 4, Chapter 28 Cumulative Effects**, presents the long and short lists of ‘other developments’ which will be considered at the ES stage, and the methodology which allowed for the identification of these other developments, to allow consultation bodies to form a view and provide comment on the other developments included. The long-list will be reviewed and if necessary, updated,

in the lead up to the ES, as the Projects design further evolves and in response to any comments raised at statutory consultation.

14.10.2 Cumulative effects from vehicle emissions associated with the English Onshore Scheme would be considered as part of the ES through the inclusion of growth factors and committed development vehicle flows in the traffic data used for the ES. For more detail on this refer to **Volume 1, Part 2, Chapter 12, Traffic and Transport.**

14.10.3 Combined effects (sometimes called intra-project effects) result principally from different types of impacts from one development acting in combination on a specific receptor. In this chapter, the following combined effects have been assessed:

- Combined effects on sensitive human receptors and ecological receptors arising from dust and traffic impacts during the construction phase of the English Onshore Scheme (see **Section 14.11**). For further information on these impacts, please also refer to:
  - **Volume 1, Part 2, Chapter 12 Traffic and Transport.**

14.11 Preliminary assessment of air quality effects

Construction Dust Assessment

14.11.1 The construction dust assessment and methodology are set out in **Volume 2, Part 2, Appendix 2.14.A Construction Dust Assessment and Methodology.** The construction dust assessment has been undertaken in accordance with the Institute of Air Quality Management construction dust guidance (Ref 14.4) and adopts a worst-case approach applying the highest sensitivity and risk classifications and assumes that construction activities could take place on the boundary of the draft Order Limits. In reality, there will be variation in the magnitude of dust emissions throughout the construction phase dependant on the specific construction activities being undertaken and variation in sensitivity of the environment across the draft Order Limits. Therefore, the risk of impacts to human and ecological receptors would vary throughout the construction phase and as such the level of environmental measures would potentially differ to those recommended in the construction dust assessment. Resultingly, a precautionary approach to defining the environmental measures was adopted to ensure that dust would be adequately controlled. Specific measures are incorporated into **Volume 2, Part 1, Appendix 1.5.B: Outline CoCP**.

Dust Emission Magnitudes

14.11.2 The potential dust emission magnitudes have been determined for the following construction activities, earthworks, construction and trackout. No demolition activities are proposed for the English Onshore Scheme; therefore they have not been considered further in the assessment.

14.11.3 **Table 14–12** below summaries the dust emission magnitudes for earthworks, construction and trackout.

Table 14–12 – Dust emission magnitude summary

Activity	Dust emission magnitude

Earthworks	Large
Construction	Large
Trackout	Large

Receptor Sensitivity

14.11.4 Receptors sensitive to potential dust impacts during earthworks and construction activities, were approximated in a construction dust study area up to 250 m from the draft Order Limits. Those receptors sensitive to trackout were approximated in the construction dust study area up to 200 m from the road, up to a distance of 250 m along the highway from the proposed bellmouths (those locations which connect the road network with the offline haul roads within the draft Order Limits). There are two statutory ecological sites within 250 m of the draft Order Limits. These are:

- Willoughby Meadow SSSI – northern edge of SSSI intersects the draft Order Limits between Willoughby and Welton le Marsh; and
- Greater Wash SPA – located immediately east of the draft Order Limits at the Anderby Creek Landfall.

14.11.5 Considering the number of receptors within the above areas and following the Institute of Air Quality Management construction dust guidance (Ref 14.4), the sensitivity of the receiving environment to specific dust impacts have been determined. These are summarised in **Table 14–13**.

Table 14–13 – Summary of the sensitivity of the area

Potential Impact	**Sensitivity of the surrounding area**		
	Earthworks	**Construction**	**Trackout**
Dust Soiling	High	High	High
Human Health	Medium	Medium	Medium
Ecology	High	High	Low

Dust Risk

14.11.6 The risk of effects in the absence of environmental measures was then defined based upon the interaction between the magnitude of emission and the highest level of area sensitivity for each dust generating activity. The (unmitigated) risk of dust effects was determined, as presented in **Table 14–14**.

Table 14–14 – Summary of the risk of dust effects

Potential Impact	**Risk**		
	Earthworks	**Construction**	**Trackout**

Dust Soiling	High Risk	High Risk	High Risk
Human Health	Medium Risk	Medium Risk	Medium Risk
Ecology	High Risk	High Risk	Low Risk

14.11.7 The Institute of Air Quality Management construction dust guidance (Ref 14.4) provides potential environmental measures to reduce impacts as a result of dust emissions during the construction phase. These have been adapted for the English Onshore Scheme based on the risk of dust effects and can be found in **Volume 2, Part 2, Appendix 2.14.A Construction Dust Assessment and Methodology.** These measures have been included within **Volume 2, Part 1, Appendix 1.5.B: Outline CoCP**.

14.11.8 It is expected that with the adoption of the control and management measures (as outlined within **Volume 2, Part 1, Appendix 1.5.B: Outline CoCP**), residual effects from construction dust would be considered **Not Significant**. Examples of control and management measures will include:

- Site Management (logging of incidents/complaints);
- Monitoring (site inspections, compliance with Dust Management plan, etc);
- Preparing and Maintaining the site (locate dust causing activities away from receptors, barriers, cleaning, enclosed specific operations with high potential for dust production, cover stockpiles, etc);
- Operating vehicle/machinery and sustainable travel (comply with NRMM standards, no idling, use mains electricity, travel plan etc);
- Operations (employ dust suppression, use enclosed chutes, minimise drop heights, etc);
- Earthworks measures (revegetate promptly, use hessian mulches and cover with topsoil, etc);
- Construction measures (avoid scabbling, keep aggregates damp, ensure fine powder materials are delivered enclosed and stored in silos, ensure bags are sealed after use); and
- Trackout measures (wash access and local roads, avid dry sweeping of large areas, ensure vehicle-borne materials are covered, install hard surface haul routes, wheel washing, etc).

Construction Vehicle Emissions: Human Receptors

14.11.9 Traffic data were provided for 47 road links across the extent of the English Onshore Scheme – these were mainly long A-Roads (the principal transport corridors in the region – A16, A47, A17, A52) close to the draft Order Limits, and roads which connected these roads to the bellmouths. The construction phase Affected Road Network and associated study area for the assessment of human receptors are displayed in **Volume 3, Part 2, Figure 14-1: Air Quality Study Area.** The Affected Road Networks denote roads where the Institute of Air Quality Management development control traffic change criteria were exceeded in the peak construction year of 2031. There is therefore potential for the English Onshore Scheme to impact on human receptors in the following areas:

- A16 John Adams Way in Eastern and central Boston – this road overlaps with the Boston Borough Councils' Haven Bridge AQMA and therefore the more stringent criteria (change of >100 LDVs or >25 HDVs) as detailed in the Institute of Air Quality Management Development Control guidance were applied. It is located in central Boston east of the River Witham. In this location there is expected to be an annual daily increase of 270 LDVs and 33 HDVs which could result in small temporary increases in pollutant concentrations within the AQMA. As the area is urban there are a number of human receptors within 200 m of this road which may require detailed assessment at ES stage should the criteria be exceeded in the final construction phase traffic datasets.
- The A52 Sleaford Road in Western Boston also exceeds the more stringent Institute of Air Quality Management criteria (250 LDVs, 32 HDVs in 2031) and runs through a relatively densely populated residential area.
- Elsewhere the Institute of Air Quality Management criteria of >500 LDVs and/or >100 HDVs as an AADT applies owing to the absence of AQMAs on roads where construction phase traffic data was provided. No roads exceeded the less stringent LDV criteria for assessment as a result of the construction of the Projects in the peak year 2031.
- Four roads are expected to exceed the Institute of Air Quality Management criteria for HDVs away from AQMAs. These are all located in the Walpole area, immediately outside the draft Order Limits near to where the Walpole converter stations and Walpole B Substation are to be constructed. The greatest increase in daily average HDV flow during 2031 is expected on Lynn Road between the southeast edge of the draft Order Limits and the A47 where an increase of 305 HDVs/day is expected as this road connects the construction site with a principal transport corridor. Additionally, the A47 between Lynn Road and Elm High Road south of Wisbech is expected to experience an increase of up to 270 HDVs during 2031.

14.11.10 Detailed dispersion modelling to assess potential impacts on human receptors would be undertaken as part of the ES once detailed traffic data is available, and should roads meet the relevant assessment criteria at that stage. However, the preliminary traffic data demonstrates that the extent of any detailed dispersion modelling of construction vehicle emissions on human receptors would likely be minimal in extent and focussed around the Haven's Bridge AQMA in Boston. Most of the roads in the vicinity of the draft Order Limits affected by the English Onshore Scheme would not require detailed assessment.

Construction Vehicle Emissions: Ecological Receptors

14.11.11 The construction phase Affected Road Network and associated study area for the assessment of ecological receptors are displayed in **Volume 3, Part 2, Figure 14-1: Air Quality Study Area.** There are no roads which exceed the National Highways DMRB LA105 Guidance traffic change criteria of 1000 AADT in the peak construction year of 2031 as a result of the Projects.

14.11.12 Three roads of the 47 where data were provided exceeded the criteria of 200 HDVs/day – these are Lynn Road, and two sections of the A47 between Lynn Road and Elm High Road south of Wisbech (as described above). There are no SSSIs, SPAs, SACs or Ramsar sites which lie within 200 m of these roads where traffic data was provided. Therefore, based on the provisional traffic data received at PEIR stage,

temporary changes in air pollutant concentrations associated with construction traffic English Onshore Scheme are unlikely to adversely affect statutory ecologically designated sites. The assessment of construction vehicle emissions on ecological receptors will be reconsidered at the ES stage on review of detailed traffic data.

Compliance Risk Assessment

14.11.13 There are no DEFRA PCM links which overlap with roads meeting the traffic change criteria (as detailed in the National Highways DMRB LA105 Guidance) during the construction peak year of 2031. Therefore, based on the provisional traffic data supplied at PEIR stage, it is determined that the English Onshore Scheme does not represent a risk to compliance with the UK's Limit values. However, this will be revisited at ES stage with the final construction phase traffic dataset.

Non-Road Mobile Machinery / Emergency Generators

Non-Road Mobile Machinery

14.11.14 Non-Road Mobile Machinery would be active across the construction phase of the English Onshore Scheme at the indicative zone for construction compounds, indicative zone for converter stations and Walpole B Substation. Within 200 m of these indicative locations there are a number of sensitive human receptors, consisting mostly of residential properties and farms. The majority of these are concentrated to the south of the draft Order Limits in the Walpole area where the Walpole converter stations and Walpole B Substation are to be located, including Ingleborough along Mill Road and Whiteling along West Drove North. The closest sensitive human receptors to the indicative zone for construction compounds, indicative zone for converter stations and Walpole B Substation locations in Walpole are those located approximately 15 m to the east on West Drove North (Whiteling).

14.11.15 A handful of sensitive human receptors are located within 200 m of the following indicative zone for construction compound locations:

- Along Rectory Road (South of Huttoft);
- Along Donington Road (West of Kirton End); and
- Along Waste Green Lane (Northwest of Fosdyke).
- Whiteling Compound – Along West Drove North

14.11.16 The are no ecological sites located within 200 m of the indicative construction compounds, indicative zone for converter stations and Walpole B Substation locations.

Emergency Generators

14.11.17 Within 200 m of the indicative zone for converter stations and Walpole B Substation there are a number of sensitive human receptors, which consist mostly of residential properties and farms. Including residential properties in Ingleborough along Mill Road and in Whiteling along West Drove North. The closest sensitive human receptors to the indicative zone for converter stations and Walpole B Substation are those located on West Drove North (Whiteling).

14.11.18 There are no ecological sites with statutory designations within 200 m of the indicative zone for converter stations or Walpole B Substation locations.

14.12 Further work to be undertaken

14.12.1 The information provided in this PEIR is preliminary, the final assessment of potential significant effects will be reported in the ES. This section describes the further work to be undertaken to support the air quality assessment presented in the ES.

Baseline

14.12.2 A monitoring survey specific to the Projects is to be undertaken in advance of the ES, for the purpose of model verification and informing the baseline conditions for the assessment. Details of the project specific monitoring survey will be provided in the ES, however the monitoring points are likely to be located along the principal A-road corridors which serve the English Onshore Scheme. It is envisaged that the survey will be carried out for six months. The survey will be carried out in accordance with best practice Quality Assurance and Control procedures detailed in Defra's Local Air Quality Management Technical Guidance (22) (Ref 14.7).

14.12.3 Additionally, full datasets for sites with local ecological designations will be acquired prior to ES stage, so that any sites within the respective vehicle emissions and Non-Road Mobile Machinery/emergency generator can be screened to ascertain whether they require further detailed assessment.

Consultation

14.12.4 Consultation will be undertaken between now and the ES being prepared. Consultation on the proposed methodology and the locations of the project specific monitoring survey will be undertaken with the following local authorities:

- East Lindsey District Council;
- Boston Borough Council;
- South Holland District Council;
- Borough Council of King's Lynn and West Norfolk; and
- Fenland District Council.

14.12.5 Consultation will also be undertaken with Natural England, which will include a review of the PEIR findings and discussion on the ES methodology for assessing potential impacts on ecological receptors.

14.12.6 Key stakeholders and local communities would also be consulted during the ES stage.

14.12.7 The assessments undertaken for the PEIR will be reviewed following stakeholder consultation feedback. The following assessments will either be updated or undertaken in the ES where they have not been undertaken in the PEIR:

- Updated construction dust assessment using detailed design information at the ES stage;
- Construction phase vehicle emissions assessment on review of detailed traffic data;

- Compliance risk assessment on review of detailed traffic data; and
- Assessment of Non-Road Mobile Machinery and diesel generators on review of detailed data.

Further environmental measures

14.12.8 Further consultation with relevant statutory consultees would be undertaken to define the scope and extents of the environmental measures set out in the assessment above. If, following stakeholder consultation feedback, further design refinement and further assessment, it is identified that additional measures are required, these will be detailed as part of the ES.

14.12.9 It is envisaged that options for alternative routeing of construction phase vehicles would be explored prior to ES stage in order to avoid sensitive human and ecological receptors identified at PEIR stage.

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