Preliminary Environmental Information Report Volume 1

Chapter 7 Air Quality

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Contents

Glossary of Project Terminology

This Glossary has been provided to define terms used across a number of the LionLink Proposed Scheme documents.

Abbreviations contained herein are provided at the end of the document in the **Topic Glossary and Abbreviations.**

Term	Description
Amendment to Kiln Lane Substation Scenario	The scenario where the Proposed Scheme will comprise the amendments to Kiln Lane Substation that would be required if Kiln Lane Substation was built out pursuant to the EA1N/EA2 DCOs.
Applicant, the	National Grid Lion Link Limited (NGLLL)
Bellmouth	A flared vehicular access/egress point connecting permanent route to the public highway.
Converter Station	A converter station changes electricity between High Voltage Alternating Current (HVAC), which power our homes, and High Voltage Direct Current (HVDC) which is more efficient for transporting electricity over long distances and vice versa. The proposed Converter Station is located to the east of Saxmundham.
Converter Station Site	The Converter Station Site as a whole, allowing for the co-location of the Converter Station with the Converter Station being separately consented as part of the Sea Link project.
Co-ordination	The process of people or entities working together.
Co-location	Where different elements of a project, or various projects, are located in one place.
Construction Compound	Temporary compounds installed during the construction phase of the Proposed Scheme. Each compound is likely to contain storage areas such as laydown areas, soils storage, and areas for equipment and fuel, drainage, generators, car parking and offices and welfare areas (portacabins).
Development Consent Order (DCO)	An order made by the Secretary of State pursuant to the Planning Act 2008 (as amended) granting development consent for a Nationally Significant Infrastructure Project. It grants consent to develop the approved project and may include (among other things) powers to compulsorily acquire land and rights where required and deemed marine licences for any offshore works.
Draft Order Limits	The area of land identified as being subject to the DCO application. The Draft Order Limits are made up of the land required both temporarily and permanently to allow for the construction, operation and maintenance, and decommissioning of the Proposed Scheme. All onshore parts of the Proposed Onshore Scheme are located within England and offshore parts of the Proposed Offshore Scheme are located within English territorial waters to 12 Nautical

Term	Description
	Miles and then up to the United Kingdom (UK) Exclusive Economic Zone (EEZ) boundary at sea.
Dutch Offshore Components	Is the term used when referring to the offshore elements of the Project within Dutch waters.
Eastern Route Option	As part of the Underground HVDC cable corridor, the Eastern Route Option would facilitate a degree of co-location with the Sizewell Link Road (SLR) scheme.
Environmental Impact Assessment (EIA)	The EIA is a systematic regulatory process that assesses the potential likely significant effects of a proposed project or development on the environment.
EIA Scoping Report	An EIA scoping report defines the proposed scope and methodology of the EIA process for a particular project or development. The EIA Scoping Report for the Proposed Scheme was submitted to the Planning Inspectorate with a request for the Secretary of State to adopt a scoping opinion in relation to the Proposed Scheme on 6 March 2024.
Environmental Statement (ES)	The ES is a document that sets out the likely significant effects of the project on the environment. The ES is the main output from the EIA process. The ES is published as part of the DCO application.
Exclusive Economic Zone (EEZ)	The zone in which the coastal state exercises the rights under Part V of the United Nations Convention on the Law of the Sea. These rights relate principally to the water column and may extend to 200 nautical miles from baselines. This is distinct from territorial waters, which for the UK extend 12 nautical miles from the coast.
Full Build Out of Kiln Lane Substation Scenario	The scenario if the Proposed Scheme was brought forward first, then it would be responsible for developing Kiln Lane Substation for the Proposed Scheme, with sufficient additional capacity for other projects.
Joint Bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Kiln Lane Substation	The proposed connection point for the Project to the British National Electricity Transmission System, located to the north of Friston. Formerly known as Friston Substation. The new name has recently been adopted by NGET. The substation is of the same footprint and in the same location. Friston Substation will, hereafter, be referred to as Kiln Lane Substation.
Landfall	The proposed Landfall is where the proposed offshore HVDC Submarine Cables are brought ashore and meets with the onshore proposed Underground HVDC Cables. This includes the Transition Joint Bay (TJB). The proposed Landfall will be located at Walberswick, and there will be no permanent above ground infrastructure at the proposed Landfall.
Landfall Site	The area where the Landfall may be located.

Term	Description
Limit of Deviation	A maximum distance or measurement of variation within which the works must be constructed. These are lateral (i.e. on the ground) and vertical limits (in relation to height).
Link Box Chamber	Link boxes are used at joint bays to facilitate grounding connections to ensure safety and enable maintenance. Link boxes can either be installed below ground, in a link box chamber, or in an above ground link pillar
Multi-purpose interconnector (MPI)	A project where GB interconnection is combined with transmission of offshore generation within GB (and optionally within a connecting state).
National Grid Electricity Distribution (NGED)	The local distribution network operator for the Midlands, the southwest of England and south Wales.
National Grid Electricity Transmission (NGET)	Operators of the national electricity transmission network across Great Britain and own and maintain the network in England and Wales, providing electricity supplies from generating stations to local distribution companies. National Grid does not distribute electricity to individual premises, but its role in the wholesale market is vital to ensuring a reliable, secure and quality supply to all.
National Grid Lion Link Limited (NGLLL)	The Applicant, a joint venture between National Grid Ventures and TenneT. NGLLL is a business within the wider National Grid Ventures portfolio.
National Grid Strategic Infrastructure (NGSI)	Part of NGET and responsible for delivering major strategic UK electricity transmission projects, focussed on connecting more clean, low-carbon power to England and Wales.
National Grid Ventures (NGV)	Operates and invests in energy projects, technologies and partnerships to accelerate the development of a clean energy future. This includes interconnectors (such as the LionLink Project), allowing trade between energy markets and the efficient use of renewable energy resources.
Nationally Significant Infrastructure Projects (NSIP)	Major infrastructure developments in England and Wales for which development consent is required, as defined within Section 14 of the Planning Act 2008 (as amended). This includes any development which is subject to a direction by the relevant Secretary of State pursuant to Section 35 of the Planning Act 2008.
Non-standard interconnector (NSI)	A project where GB interconnection is combined with transmission of offshore generation outside of GB.
Northern Route Option	A northern cable corridor option that would allow Underground HVAC Cable delivery for Proposed Scheme only.
Offshore Hybrid Asset (OHA)	A project that combines cross-border interconnection with the transmission of offshore generation, this is an overarching term which covers both multi-purpose interconnectors (MPI) and non-standard interconnectors (NSI).
Order Limits	The maximum extent of land within which the Proposed Scheme may take place, as consented.

Term	Description
Outline Offshore Construction Environmental Management Plan (Outline Offshore CEMP)	Describes the control measures and standards proposed to be implemented to provide a consistent approach to the environmental management of the construction activities of the Proposed Offshore Scheme.
Outline Onshore Code of Construction Practice (Outline Onshore CoCP)	Describes the control measures and standards proposed to be implemented to provide a consistent approach to the environmental management of the construction activities of the Proposed Onshore Scheme.
Overhead Lines (OHL)	Conductors (wires) carrying electric current, strung from Tower to Tower.
Planning Act 2008	The Planning Act 2008 being the relevant primary legislation for national infrastructure planning.
Planning Inspectorate (PINS)	The Planning inspectorate review DCO applications and make a recommendation to the Secretary of State, who will then decide whether to approve the DCO.
Preliminary Environmental Information Report (PEIR)	The PEIR is a document, compiled by the Applicant, which presents preliminary environmental information, as part of the statutory consultation process. This is defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 as containing information which "is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)" (Section 12 2. (b)). This PEIR describes the Proposed Scheme, sets out preliminary findings of the EIA undertaken to date, and the mitigation measures proposed to reduce effects. The PEIR is published at Statutory Consultation stage for information and feedback.
Project (the)	The LionLink Project (hereafter referred to as the 'Project') is a proposal by National Grid Lion Link Limited (NGLLL) and TenneT. The Project is a proposed electricity link between Great Britain (GB) and the Netherlands with a capacity of up to 2.0 gigawatts (GW) of electricity and will connect to Dutch offshore wind via an offshore platform in Dutch waters. The Project is the collective term used to refer to the proposal for all aspects (onshore and offshore) of the proposed interconnector between GB and the Netherlands.
Proposed Offshore Scheme	The term used when referring to the offshore elements of the Proposed Scheme, seaward of the mean high-water springs to the EEZ boundary at sea.
Proposed Onshore Scheme	The term used when referring to the onshore elements of the Proposed Scheme, landward of the mean low water springs. Proposed Onshore Scheme components include:

Term	Description
	a) Kiln Lane Substation. b) Underground High Voltage Alternating Current (HVAC) Cables; c) Converter Station. d) Underground High Voltage Direct Current (HVDC) Cables; and e) Landfall.
Proposed Scheme	Used when referring to the GB scheme components of the Project, not including Dutch components. This includes both the onshore and offshore scheme components which are within UK territorial waters and up to the UK EEZ boundary at sea.
Rochdale Envelope	The Rochdale Envelope or Design Envelope approach is employed where the nature of a proposed development means that some details of a project are not available in advance of, or at the time of submitting the DCO application. The Rochdale Envelope approach defines a design envelope and parameters within which the final design will sit and ensures a robust and reliable EIA can be undertaken.
Scoping Opinion	A scoping opinion is requested from the Planning Inspectorate on behalf of the Secretary of State, to inform the requirements of EIA process and ultimately the ES which will be submitted as part of the application for development consent. Through the scoping process, the views of the statutory consultees and other relevant organisations on the proposed scope of the EIA are sought. A Scoping Opinion for the Proposed Scheme was issued by the Planning Inspectorate (on behalf of the Secretary of State) on 16 April 2024. The Applicant received a separate EIA Scoping Opinion from the Marine Management Organisation (MMO) (Reference DCO/2024/00005, dated 04 September 2024) as the MMO were unable to provide opinion to the Planning Inspectorate in time for the April 2024 deadline.
Scottish Power Renewables (SPR) East Anglia One North (EA1N) and East Anglia 2 (EA2) Consents (SPR EA1N and EA2 Consents)	The Orders made following the Scottish Power Renewables applications for development consent for the following projects: a) The East Anglia ONE North Offshore Wind Farm Order 2022; and b) East Anglia TWO Offshore Wind Farm Order 2022
Southern Route Option	A southern cable corridor option that would allow: a) Underground HVAC Cable delivery for Proposed Scheme only, or b) Underground HVAC Cable delivery for Proposed Scheme and ducting for Sea Links Underground HVAC and HVDC cables in that section.
Statutory Consultation	Consultation undertaken with the community and stakeholders in advance of the application for development consent being submitted

Term	Description
	to the Planning Inspectorate, on behalf of the Secretary of state, in accordance with the PA 2008.
Substation	Substations are used to control the flow of power through the electricity system. They are also used to change (or transform) the voltage from a higher to lower voltage to allow it to be transmitted to local homes and businesses.
TenneT	Operator of the electricity transmission network across the Netherlands.
Tower	A structure used to carry overhead electrical conductors, insulators, and fittings. Often described as a pylon.
Transition Joint Bay (TJB)	An underground structure at the Landfall Site that house the joints between the offshore cables and the onshore cables.
Underground Cable Corridors	Collective term for the corridors within which HVAC and HVDC cables are planned.
Underground High Voltage Alternating Current (HVAC) Cable Corridor	A corridor in which the underground HVAC cables are planned to be installed.
Underground High Voltage Alternating Current (HVAC) Cables	Transmission cables which connect between the Converter Station and Substation. HVAC cables are designed to manage fluctuating flow of current.
Underground High Voltage Direct Current (HVDC) Cable Corridor	A corridor in which the underground HVDC cables are planned to be installed.
Underground High Voltage Direct Current (HVDC) Cables	Transmission cables which connect the Converter Station to the Landfall Site and then offshore. HVDC cables are designed to manage current flowing in one direction.
Visibility Splay	An area of land at a road junction that ensures drivers have an unobstructed view of oncoming traffic allowing them to safely join or cross the road.
Western Route Option	As part of the Underground HVDC cable corridor, the Western Route Option would deliver the Scheme within its own corridor with no co-location with the Sizewell Link Road (SLR) scheme.

7 Air Quality

7.1 Introduction

7.1.1 This chapter provides a preliminary assessment of the potential likely significant effects in relation to the Air Quality from the construction, operation and maintenance, and decommissioning of LionLink (hereafter referred to as 'the Proposed Scheme').

7.1.2 This chapter outlines legislation, policy and guidance that is relevant to Air Quality, summarises the engagement undertaken to date, sets out the scope and methodology of assessment, and describes the baseline environment. Following this, the likely significant effects of the Proposed Scheme on Air Quality are assessed taking account of mitigation measures within the design and control measures. The need for any additional mitigation is then considered along with any proposals for monitoring and/or enhancement. The chapter concludes with a summary of residual effects.

7.1.3 Air Quality aspects considered within this chapter for the Proposed Scheme are:

a. construction related dust;
b. traffic emissions; and
c. generator and Non-Road Mobile Machinery (NRMM) emissions.

7.1.4 This chapter should be read in conjunction with **Chapter 2 Description of the Proposed Scheme**, which describes the development parameters against which the effects considered in this chapter have been assessed and **Chapter 5 Approach and Methodology** which describes the approach to the preliminary Environmental Impact Assessment (EIA) including the approach to the assessment scenarios considered.

7.1.5 In addition, there may be interrelationships related to the potential effects on Air Quality and other disciplines. Therefore, this chapter should be read alongside relevant parts of other chapters; namely:

a. **Chapter 8 Ecology and Biodiversity** of this PEIR, which considers the potential for impacts upon ecological receptors due to air emissions during construction and operation;
b. **Chapter 10 Health and Wellbeing** of this PEIR, which considers the impacts on human health and wellbeing due to air emissions during construction and decommissioning (for the Health and Wellbeing assessment, operational impacts has been scoped out); and
c. **Chapter 17 Traffic and Transport** of this PEIR, which considers the impacts in relation to Traffic and Transport from construction, operation and maintenance, and decommissioning of the Proposed Scheme.
d. **Chapter 27 Climate Change and Carbon** of this PEIR, which considers the impacts of Climate Change and Carbon from the construction, operation and maintenance, and decommissioning of the Proposed Scheme.

7.1.6 This chapter is supported by the following appendices and figures:

a. **Figure 7.1 Air Quality Monitoring Locations;**
b. **Figure 7.2 Air Quality Receptor Locations;**
c. **Figure 7.3 Construction Dust Buffers;**
d. **Figure 7.4 NRMM Impacts;**
e. **Appendix 7.1 Air Quality Assessment Methodology;**
f. **Appendix 7.2 Air Quality Baseline Data; and**
g. **Appendix 7.3 Air Quality Assessment Results.**

7.2 Legislation and policy framework

7.2.1 This section identifies the legislation, policy and guidance that has informed the assessment of the likely significant effects on Air Quality.

7.2.2 **Table 7.1** lists the legislation relevant to the assessment of the likely significant effects on Air Quality.

Table 7.1: List of relevant legislation for Air Quality

Legislation	Relevance to assessment
Environment Act 2021 (Ref 1)	Relevant for the assessment and mitigation of construction and operational air quality. Part IV places a duty on the Secretary of State for the Environment to develop, implement and maintain an air quality strategy with the aim of reducing atmospheric emissions and improving air quality. This includes the statutory duty for local authorities to undergo a process of local air quality management and declare Air Quality Management Areas (AQMA) where necessary. The Act requires the Secretary of State to set a long-term target (15-year minimum) for air quality, and a target (no mandate on length) for the annual amount of $PM_{2.5}$ in the air. The government published the targets on 16 December 2022 with an Environmental Improvement Plan provided in 2023 (Ref 2) which sets interim targets. It also requires local authorities to produce an action plan to ensure standards are met for AQMAs. The Act requires the National Air Quality Strategy (Ref 3) to be reviewed at least every five years.
Air Quality Standards Regulations 2010 (amended in 2016) (Ref 4)	Relevant for the assessment of construction and operational air quality. The Regulations set legally binding national limit values and standards for the air pollutants of interest (referred to as 'standards'). These are nitrogen dioxide (NO_2), particulate matter (PM_{10}, $PM_{2.5}$) and ammonia (NH_3). The standards have been considered in this assessment to evaluate compliance with air quality limit values and assess the potential significance of the air quality effects on the environment. The standards are presented in **Table 7.8**.

Legislation	Relevance to assessment
Environmental Protection Act 1990 (Ref 5)	Relevant for the assessment of construction, operational, maintenance and decommissioning for air quality. Part I of the Act provides the framework for managing air pollution in the UK, which regulates emissions from prescribed industrial processes to limit their environmental impact. Part IV of the Act requires local authorities to periodically review and assess air quality within their jurisdictions, and to designate AQMA where national air quality standards are not met.
The Environmental Target (Fine Particulate Matter) (England) 2023 (Ref 6)	Relevant for the assessment of construction and operational air quality. This document set two new targets for $PM_{2.5}$ concentrations in England. One set of targets focuses on absolute concentrations. The long-term target is to achieve an annual mean $PM_{2.5}$ concentration of 10µg/m^3 by the end of 2040, with the interim target being a value of 12µg/m^3 by the start of 2028. The second set of targets relate to reducing overall population exposure to $PM_{2.5}$. This Regulation sets the framework and objective for local authorities to work toward reducing $PM_{2.5}$ emissions from new development during planning decisions. The Proposed Scheme would be expected to operate beyond 2040. Therefore, the target level for the annual mean $PM_{2.5}$ concentrations of 10µg/m^3 has been considered in the assessment.
Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 (Ref 7)	Relevant for the assessment of construction air quality. The use of plant and machinery during construction phase of the Proposed Scheme is required. Equipment use has the potential to impact dust and emissions of NO_x, PM_{10} and $PM_{2.5}$. This Regulation requires Non-Road Mobile Machinery ("NRMM") engines meet certain emissions standards for different engine types. It also aims to reduce emissions from NRMM through the fitting of devices to engines, to help meet the Stage IV emissions standard, where applicable.

National policy

7.2.3 The primary policy which the Secretary of State must have regard to when deciding whether to grant a Development Consent Order (DCO) for the Proposed Scheme are the National Policy Statements (NPSs). Of particular relevance to the Proposed Scheme are the NPS for Electricity Networks Infrastructure (EN-5) (Ref 9) and the Overarching National Policy Statement for Energy (EN-1) (Ref 10). These set out policy which guides how applications for development consent for energy infrastructure should be decided and how the effects of such infrastructure are considered. The National Planning Policy Framework is also important and relevant in the decision-making process.

7.2.4 **Table 7.2** lists the paragraphs from the NPSs and other national policy that are relevant to the Air Quality assessment. It also sets out where these policy requirements are addressed within this chapter.

Table 7.2: List of relevant national policy for Air Quality

Relevant paragraph reference	Summary of policy requirement	Where addressed in Preliminary Environmental Information Report (PEIR)
Overarching NPS for Energy (EN-1) (Ref 10)		
5.2.1 – 5.2.7	The policy explains energy infrastructure projects can have adverse air quality effects during construction, operation and decommissioning phases. Relevant legal limits should be considered as part of those projects. Both human and ecological receptors could be impacted by air emissions and their proximities to the infrastructure projects should be considered carefully. Mitigation should also be considered accordingly.	Assessment of likely significant effects during construction, operation and maintenance and decommissioning phases has been undertaken as part of this PEIR at both human and ecological receptors, as included in **Section 7.8**. Consideration of the Air Quality Standards have been given in **Table 7.8**. Mitigation measures to minimise human exposure and potential impact of adverse air quality have been included in **Section 7.7**.
5.2.8 to 5.2.14 – Applicant assessment	These sections set out the air quality assessment requirements and explain that the assessment should consider the Environmental Targets (Fine Particulate Matter) (England) Regulations 2022 and relevant Defra guidance. This policy also requires appropriate mitigation measures to be considered for both construction and operational phases.	Air quality standards used in the assessment are presented in **Table 7.8**. Best practice and embedded mitigations have been applied and are detailed in **Section 7.7** and the air quality assessment is presented in **Section 7.8**.
NPS for Renewable Energy Infrastructure (EN-3) (Ref 11)		
Paragraphs 2.7.36, 2.7.59 and 2.7.87	The policy requests an air quality assessment of the proposed infrastructure and demonstrate compliance with relevant regulations. Details on relevant air quality emissions that will result from the applicant's plant should be provided. Suitable abatement technologies should also be considered, in line with the Environment Agency's (EA) requirements	An assessment of potential air quality effects from construction and operation and maintenance phases has been undertaken in **Section 7.8.** Good practice and embedded mitigation measures following relevant guidance and professional experience have been proposed in **Section 7.7** for the Proposed Onshore Scheme.

Relevant paragraph reference	Summary of policy requirement	Where addressed in Preliminary Environmental Information Report (PEIR)
National Planning Policy Framework (Ref 12)		
Paragraphs 110, 187 and 199.	The National Planning Policy Framework (NPPF) outlines the requirement to assess air quality effects to ensure compliance with national air quality standards and incorporate mitigation measures into decision-making.	An assessment of potential air quality effects from construction, operation and maintenance and decommissioning phases has been undertaken in **Section 7.8,** against national air quality standards. Good practice and embedded mitigation measures following relevant guidance and professional experience have been proposed in **Section 7.7** for the Proposed Onshore Scheme.
Environmental Improvement Plan (Ref 2)		
Page 77	The plan aims to address air, water, and land pollution and it sets out targets to improve the environment and people's health and quality of life. The document represents the first review of the 25 Year Environment Plan.	The Proposed Scheme has the potential to generate emissions to air. Potential effects in relation to water and land pollution are considered in **Chapter 12 Hydrology, Hydrogeology and Drainage** and **Chapter 9 Geology and Contamination respectively**. The Proposed Scheme would be expected to operate beyond 2040. Therefore, the target level for the annual mean $PM_{2.5}$ concentrations of 10µg/m^3 has been considered in the assessment in **Section 7.8**.
Clean Air Strategy (Ref 13)		
Whole document	The document sets targets for improving air quality across the country. It includes actions to reduce emissions from various sources, such as transport, domestic activities, farming and industry. There is also a long-term target for reducing population exposure to $PM_{2.5}$ concentrations to meet the World Health Organizations (WHO) stated target of the time of 10µg/m^3 as an annual mean.	The legally binding national air quality standards for the air pollutants assessed are outlined in **Table 7.8** and considered in the assessment in **Section 7.8**. Mitigation measures to minimise the potential air quality impacts have been proposed in **Section 7.7**.

Relevant paragraph reference	Summary of policy requirement	Where addressed in Preliminary Environmental Information Report (PEIR)
National Planning Practice Guidance (NPPG) (Ref 14)		
Air Quality Section	The NPPG provides a concise outline as to how air quality should be considered in order to comply with the NPPF and states when air quality is considered relevant to a planning application. This includes factors such as changes in traffic volumes, vehicle speeds, congestion or traffic composition, the introduction of new point sources of air pollution, exposure of people to existing sources of air pollutants, and the potential to give rise to air quality impacts at nearby sensitive receptors.	The PEIR presents an assessment of air quality effects during construction, operation and maintenance and decommissioning of the Proposed Onshore Scheme is presented in **Section 7.8**. Relevant human and ecological receptors have been considered in the PEIR and are listed in **Appendix 7.1 Air Quality Assessment Methodology**.

7.2.5 In April 2025, the Department for Energy Security and Net Zero (DESNZ) published the consultation on the revised energy NPS's, with draft updates made to NPS EN-1, NPS EN-3 and NPS EN-5. The Applicant recognises the clarifications that are proposed in the draft NPS's, including specific reference to Offshore Hybrid Asset's directed into the NSIP regime under Section 35 of the Planning Act 2008 (draft NPS EN-1 paragraph 4.2.18 and draft NPS EN-3 paragraph 1.6.3).

7.2.6 The Applicant acknowledges that the draft policy is subject to change and therefore all potentially relevant references that apply to the Proposed Scheme are not recorded within this PEIR.

7.2.7 The Applicant will continue to monitor the progress of the designation of the NPS's and their applicability to the Proposed Scheme, as it progresses through Statutory Consultation and towards the submission of the application for development consent.

Local policy

7.2.8 The local policies listed in **Table 7.3** are considered relevant to the Air Quality assessment of the Proposed Onshore Scheme.

Table 7.3: List of relevant local policy for Air Quality

Local planning authority	Relevant local policy	Relevance to assessment
East Suffolk Council (ESC)	Air Quality Strategy (2021) (Ref 14) The Air Quality Strategy outlines need for assessment of local air quality conditions, including whether a development is within or near an AQMA, such as those in Woodbridge or Stratford St Andrew. Potential impacts and mitigation strategies must be detailed. The strategy emphasises embedding air quality considerations into all local and strategic decision-making processes. In addition, the strategy outlines the need for implementation of traffic management plans, along with community engagement, in order to appropriately mitigate any decrease in air quality.	The PEIR presents AQMAs relevant to the Proposed Onshore Scheme in **Section 7.6**. An impact assessment considering construction, operation and maintenance and decommissioning of the Proposed Onshore Scheme is presented in **Section 7.8**. Best practice and embedded mitigation measures are recorded in **Section 7.7**. Mitigation measures for traffic and transport are presented in **Chapter 17 Traffic and Transport**.
ESC	Suffolk Coastal Local Plan (2020) (Ref 16) Policy SCLP10.3 Environmental Quality highlights the importance of maintaining and improving air quality in the district. This should be done through assessing potential impacts and outlining measures to mitigate any adverse effects, including cumulative impacts of the developments in combination with other projects. In addition, if the developments within or near an AQMA, any potential for exacerbating existing air quality issues should be assessed, highlighting the need for ongoing monitoring and mitigation strategies specific to the area. PolicySCLP11.3 Residential Amenity highlights the ESP will have regard air quality and other forms of pollution when considering the impact of development on residential amenity. Development will provide for adequate living conditions for future occupiers and will not cause an unacceptable loss of amenity of existing or future occupiers of development in the vicinity.	The PEIR presents AQMAs relevant to the Proposed Onshore Scheme in Section 7.6. An impact assessment considering construction, operation and maintenance and decommissioning of the Proposed Onshore Scheme is presented in Section 7.8. Standard good practice and embedded mitigation measures are recorded in Section 7.7. A cumulative assessment will be undertaken at ES stage. The cumulative assessment methodology is set out in Chapter 28 Cumulative Effects.
ESC	Waveney Local Plan (2019) (Ref 17)	An assessment of air quality effects during construction,

Local planning authority	Relevant local policy	Relevance to assessment
	The relevant air quality section from the local plan is from Paragraph 8.117, it states where vehicle movements are likely to significantly increase in these locations, further assessment on air quality and impact on habitats will be required to inform project level Habitat Regulations Assessments.	operation and maintenance and decommissioning of the Proposed Onshore Scheme is presented in **Section 7.8**. Ecological receptors (identified in **Section 7.6)** have been considered in the assessment. Ecological sites within 200m of the affected road network (ARN) have been screened in the PEIR and are listed in **Appendix 7.1 Air Quality Assessment Methodology**. At ES stage, an assessment based on construction traffic and operational traffic will be undertaken to identify the potential for likely effects on ecological receptors will be undertaken. Results for sensitive ecological receptors will be factored into the assessment reported in the ES chapter for ecology and biodiversity, where applicable.

7.3 Consultation and engagement

7.3.1 This section describes the outcome of, and response to, the Environmental Impact Assessment (EIA) Scoping Opinion (Ref 18) in relation to the Air Quality assessment.

7.3.2 It also provides details of the ongoing technical engagement that has been undertaken with key stakeholders and provides a brief overview of the non-statutory public consultation undertaken to date.

7.3.3 Feedback from engagement and consultation are used to define the assessment approach and to ensure that appropriate baseline information is used.

7.3.4 It should be noted that feedback is also used to drive the design of the Proposed Scheme to avoid, prevent and reduce any likely environmental effects. **Chapter 3 Alternatives and Design Evolution** reports how the Proposed Scheme design has evolved in response to feedback. Details of proposed embedded design (Primary) mitigation and standard good practice (Tertiary) mitigation measures relevant to the Air Quality assessment.

Consultation

Non-statutory consultation

7.3.5 Feedback received from stakeholders during the 2022 and 2023 Consultation is outlined within the **Interim Non-Statutory Consultation Feedback Summary Report 2023** (Ref 18) and **Supplementary Non-Statutory Consultation Summary Report 2024** (Ref 19).

7.3.6 **Table 7.4** below includes a summary of key non statutory consultation feedback received to date and how this has been addressed within the PEIR or will be within the ES. All feedback received has been considered as part of the ongoing EIA.

Table 7.4: Key non statutory consultation feedback for Air Quality

Stakeholder	Comment	Applicant response
ESC; Suffolk County Council (SCC); Historic England; Parish and Town Councils: Alderburgh Town Council, Southwold Town Council, Aldringham-cum-Thorpe Parish Council, Dunwich Parish Council, Reydon Parish Council, Walberswick Parish Council; and Friston Parish Council.	Relating to construction methodologies, respondents flagged concerns around construction impacts onshore which included; • The impact on Walberswick, with concerns about the proximity of the proposed Landfall to residential properties; and • Concerns centred around increased dust as a result of construction methodologies proposed.	A construction dust assessment has been undertaken following the Institute of Air Quality Management (IAQM) construction dust guidance (Ref 20). The impacts have been identified, and suitable mitigation measures have been recommended. The construction dust assessment is presented in **Section 7.8** and the mitigation measures are presented in **Section 7.7**. For construction traffic, the Transport Assessment will be undertaken at ES stage as described in **Chapter 17 Traffic and Transport** and relevant data will be inputted into the air quality assessment. At ES stage, the traffic data will be compared against the EPUK and IAQM and Air Quality planning guidance (Ref 21) and this will determine the level of construction traffic air quality assessment required. Based on available information during PEIR, the construction traffic routes, and nearby receptors have been reviewed.
Natural England	• Natural England's Advice on Operations for each designated site within the cable route corridor	An assessment of air quality effects during construction, operation and maintenance and decommissioning

Stakeholder	Comment	Applicant response
	and Zone of Influence (ZoI) give a clear, high-level view of what we consider sensitive to various activities. • The Advice on Operations should be read in conjunction with the Supplementary Advice on Conservation Objectives (SACOs), which set out the key attributes for the feature in question.	of the Proposed Onshore Scheme is presented in **Section 7.8**. Ecological receptors (identified in **Section 7.6)** have been considered in the assessment. Ecological sites within 200m of the affected road network (ARN) have been screened in the PEIR (see **Paragraph 7.4.14** for further information) and are listed in **Appendix 7.1 Air Quality Assessment Methodology**. At ES stage, an assessment based on construction traffic and operational traffic will be undertaken to identify the potential for likely effects on ecological receptors will be undertaken. Results for sensitive ecological receptors will be factored into the assessment reported in the ES chapter for ecology and biodiversity, where applicable.

EIA Scoping Opinion

7.3.7 An EIA Scoping Opinion was adopted by the Planning Inspectorate on behalf of the Secretary of State on 16 April 2024. Comments received from the Planning Inspectorate in relation to Air Quality are provided in **Table 7.5**.

Table 7.5: Preliminary response to Planning Inspectorate Scoping Opinion comments on Air Quality

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
3.1.1	**Vehicle emission impacts on ecological and human receptors during operation**: The Inspectorate agrees that it is unlikely that there would be a significant change in vehicle flows during operation and therefore it is also unlikely that significant effects would occur in respect of air quality. The ES should confirm that the anticipated road vehicle movements are below the IAQM and EPUK screening values and provide the outcome of the operational screening assessment. Should the screening values be	The Proposed Scheme transport team has provided data for the operational traffic in support of the PEIR stage. The data shows a total of 53 light duty vehicles (LDV) in annual average daily traffic (AADT) and seven heavy duty vehicles (HDV) in AADT would be generated during the operation of the Proposed Onshore Scheme. The additional vehicles are below the screening criteria detailed in the EPUK and IAQM air quality planning guidance (Ref 21). As such, further assessment is not required during the PEIR.

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	exceeded then an assessment of likely significant effects should be provided.	The operational traffic data will be reviewed again during the preparation the ES, however, it would likely to remain below the EPUK and IAQM's screening criteria.
3.1.2	**Selection of receptors**: The criteria and professional judgement used to identify human and ecological receptors within the Air Quality study area should be clearly described in the ES. The ES should present a justification for any ecological sites within the study area that are excluded from the assessment based on relevant guidance. This should be done in consultation with the relevant consultation bodies.	The assessment methodology detailed in **Section 7.4** outlines the approach to selecting human and ecological receptors for the PEIR. Selection of receptors has followed a long list approach, in which any ecological or human receptors that are within 200m of the Draft Order Limits (see **Paragraph 7.4.14** for further information) which includes known haul and access roads have been included in the PEIR. This approach has been followed as construction traffic data is not available during the preparation of the PEIR, so an ARN cannot be established. For human and ecological receptors, selected receptors are presented in **Appendix 7.1 Air Quality Assessment Methodology**. Traffic data will be available to inform the ES stage. In the ES, the EPUK and IAQM planning criteria (for human receptors, Ref 21) and Natural England's screening criteria (for ecological receptors, Ref 25) will be applied to define the ARN accordingly. The above methodology for human receptors was presented in the Scoping Report (Ref 22). Once traffic data is available, the potential receptors will be identified, and consultation will be undertaken with the relevant consultation bodies to agree the approach.
3.1.3	**Baseline data sources**: The Applicant states that it is not proposed to collect any primary Air Quality data. It is proposed that the baseline description will be informed by a desk study, which draws upon monitoring by the relevant local authority and Department for Environment, Food and Rural Affairs	A consultation meeting was undertaken (10 August 2023) with the relevant local authorities and agreement was made on the proposed desk-based approach for collecting baseline data (Ref 18). It is considered that the desk-based approach is adequate as the study area is not within any AQMAs, and local Air Quality is not of

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	(Defra) projected background concentrations. Effort should be made to agree the requirement for any additional baseline survey data with the relevant consultation bodies. The assessment in the ES should be carried out with reference to a robust baseline position reflecting the relevant study area, including an understanding of relevant pollutant concentrations. Where required, further monitoring should be conducted to supplement available data from the local authority monitoring. The Applicant's attention is drawn to Natural England's (NE) comments (Appendix 2 of this Opinion) regarding the Air Pollution Information System (APIS). The Applicant should consider use of APIS as a data source to identify the sensitivity of habitats and features of designated sites.	concern and remains below any relevant Air Quality standards. In terms of the use of APIS data, the potential likely significant effects due to the Proposed Onshore Scheme would be as a result of construction traffic and the proximities of the sensitive ecological receptors. It should be noted that operational traffic impacts are considered to be negligible (operational traffic data is provided in Scoping Opinion ID 3.1.1). Construction traffic data is not available during the preparation of the PEIR but will be available during the ES stage. As such, the construction data will be reviewed and compared against the screening thresholds detailed in the Natural England's guidance (Ref 25). Should detailed assessment be required, APIS data would be reviewed and presented in the ES.
3.1.4	**Study area/air quality management areas (AQMAs)** The ES should include a figure(s) to identify 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 location and extent of any AQMAs within or in proximity to the final study areas should be provided on a figure. The Applicant's attention is drawn to ESC's comments (Appendix 2 of this Scoping Opinion) regarding the Suffolk Coastal District Council AQMA No.3. The ES should confirm whether there are any relevant AQMAs likely to experience impacts from Air Quality change as a result of an increase in traffic on the ARN.	Figures of all areas stated have been included (see **Figure 7.2 Air Quality Receptor Locations)**. Information of AQMAs is presented in **Section 7.6**. It should be noted that the Proposed Onshore Scheme is not in proximity to any AQMAs. In terms of traffic increase, operational traffic impacts are considered to be negligible (see further information provided in Scoping Opinion ID 3.1.1). For construction traffic, trip data is not available during the preparation of the PEIR but will be available during the ES stage. Therefore, the traffic will be reviewed and compared with the EPUK and IAQM planning guidance (Ref 21) during the ES stage to determine if a detailed assessment would be required.

Engagement

7.3.8 This section provides details of the ongoing technical engagement that has been undertaken with stakeholders in relation to Air Quality and is outlined below.

Key stakeholders

7.3.9 Key stakeholders with views and concerns regarding Air Quality have been identified as including:

a. ESC; and
b. Parish and Town Councils: Friston Parish Council, Leiston-cum-Sizewell Town Council; and Aldringham-cum-Thorpe Parish Council

7.3.10 Engagement was undertaken with ESC in August 2023 via an online meeting. The key points of discussion included:

a. The methodology proposed for the EIA, including methodology for assessing construction dust and construction traffic;
b. The potential impacts associated with construction and operation of the Proposed Scheme; and
c. Potential mitigation measures.

7.3.11 Outcomes of the engagement referenced in **Paragraph 7.3.10** included;

a. Assessment of construction dust impacts on both ecological and human receptors would be scoped in, following discussion with ESC;
b. Impacts related to NRMM associated with the construction phase would also be included within the assessment; and
c. Impacts from dust related to construction activities can be mitigated following high-risk mitigation measures as detailed in the IAQM guidance (Ref 20).

7.3.12 Further engagement is anticipated to be undertaken prior to the ES stage, when the design of the Proposed Onshore Scheme has evolved and when the results of the preliminary assessment undertaken for the PEIR can be discussed and the final ES methodology agreed.

7.4 Assessment methodology

7.4.1 This section outlines the methodology followed to assess the potential likely significant effects of the Proposed Scheme in relation to Air Quality including:

a. scope of the assessment;
b. study area;
c. methodology and assessment criteria; and
d. assessment of cumulative effects.

7.4.2 This section is a description of how receptor sensitivity, magnitude of impact and significance of effects are all described and assigned to the assessment.

7.4.3 The project-wide approach to the assessment methodology is set out in **Chapter 5 EIA Approach and Methodology**.

Scope of the assessment

7.4.4 Potential likely significant effects requiring assessment may be temporary or permanent and may occur during construction, operation and maintenance, and decommissioning. Potential likely significant effects on Air Quality receptors

within the scope of the assessment are summarised in **Appendix 7.1 Air Quality Assessment Results** in **Table 7.6.** The scope of the assessment has responded to feedback received as detailed in **Paragraph 7.3.10**.

7.4.5 It is acknowledged the generators and NRMM emissions for construction, and combustion plant during operation were not scoped in as part of the **EIA Scoping Report** (Ref 22). Assessments undertaken for other National Grid projects such as the Bramford to Twinstead Reinforcement project (Ref 23) and Norwich to Tilbury (Ref 24), identified the potential for significant effects as a result of construction generators and NRMM. As such, construction generators and NRMM emissions for the Proposed Onshore Scheme have been scoped in as a precautionary approach. In addition, since preparation of the **EIA Scoping Report**, the Proposed Onshore Scheme design has evolved and includes the requirement for operational combustion plant. On this basis, an assessment of operational combustion plant has now been scoped in.

Table 7.6: Summary of the scope for Air Quality assessment

Receptor	Construction	Operation	Decommissioning
Human receptors	Scoped in for potential impacts from construction dust, NRMM and construction traffic emissions.	Scoped in for onsite combustion plants used during operation. Scoped out for potential impacts from operational traffic emissions. The PEIR defines the anticipated number of operational road vehicle movements (provided in **Table 7.5**) to be below the EPUK and IAQM screening criteria from the data provided by the Proposed Scheme transport consultant.	Scoped in for potential impacts from dust, NRMM and traffic associated with decommissioning works.
Ecological receptors	Scoped in for potential impacts from construction dust, NRMM and construction traffic emissions.	Scoped out for combustion plant used during operation and for potential impacts from operational traffic emissions.	Scoped in for potential impacts from dust, NRMM and traffic associated with decommissioning works.

Study area

7.4.6 This section describes the spatial scope (the area which may be impacted) for the assessment as it applies to Air Quality.

Baseline

7.4.7 The baseline study area, presented in **Figure 7.1 Air Quality Monitoring Locations**, has included a review of sources and available monitoring data within 2km of the Draft Order Limits as per the **EIA Scoping Report** (Ref 22). The 2km area reflects industry standard/good practice and considered appropriate to understand the effects from local sources such as roads and industrial processes and to gather a suitably representative baseline monitoring data set.

7.4.8 An area of 2km is included for the review of Part A industrial processes as they are large emitters which can have an effect on local air quality. The distance of 2km is selected following the Environment Agency guidance (Ref 22) which sets the screening distances for Part A processes. There are three Part A industrial processes with emissions to air identified within the 2km buffer from the Draft Order Limits, as shown in **Table 7.1** in **Appendix 7.2 Air Quality Baseline Data.**

Construction dust

7.4.9 The study area for construction dust comprises:

a. 250m from the Draft Order Limits (50 m for ecological effects); and
b. 50m from primary access routes used by construction vehicles on the public highway, up to 250m from the construction site entrance along haul roads used by HGVs.

7.4.10 The study area is in accordance with the IAQM dust guidance (Ref 20) as set out in the **EIA Scoping Report** (Ref 22). The study areas' sensitivity to dust soiling, health and ecological effects has been determined through assessing the number of receptors and their sensitivity to dust soiling and health effects within 20m, 50m, 100m, and 250m from the Draft Order Limits. This study area is presented on **Figure 7.3 Construction Dust Buffers.**

Construction traffic

7.4.11 The Air Quality impact of the Proposed Onshore Scheme from traffic would be associated with the anticipated rise in travel activity across the highway network resulting from construction.

7.4.12 Two sets of screening thresholds have been applied to traffic flows to define an ARN for human and ecological receptors following best practice guidance, as detailed in the EPUK and IAQM planning guidance (Ref 21).

7.4.13 For human receptors, the study area for the construction vehicle exhaust emission assessments was determined using the screening criteria detailed in the EPUK and IAQM planning guidance (Ref 21). The screening criteria are as follows:

a. A change of LDV flows of:
   i. more than 100 AADT within or adjacent to an AQMA; or
   ii. more than 500 AADT elsewhere.
b. A change of HDV flows of:
   i. more than 25 AADT within or adjacent to an AQMA; or
   ii. more than 100 AADT elsewhere.

7.4.14 Meeting either of these criteria indicates that detailed dispersion modelling of the road traffic emissions is necessary. Roads which exceed the criteria, and where sensitive human receptors are located within 200m of roads and junctions along the ARN, would be included to create the ARN. Beyond 200m, traffic emissions are expected to have a minimal air quality impact on relevant receptors, as detailed in the EPUK and IAQM guidance (Ref 21).

7.4.15 For ecological receptors, the traffic data for construction has been screened using the relevant criteria set out in the Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (Ref 25). The screening criteria are as follows:

a. A change of LDV flows of:
   i. more than 1000 AADT within 200 m of a designated site.
b. A change of HDV flows of:
   i. more than 200 AADT within 200 m of a designated site.

7.4.16 Construction traffic data was not available during the preparation of the PEIR, and therefore ARN could not be determined using the screening criteria from the EPUK and IAQM planning guidance (Ref 21). The study area for construction traffic has been determined as a 200m buffer from the Draft Order Limits, which includes all construction haul and access routes known during the PEIR. This approach will be updated in the ES. The approach to a 200m buffer for the PEIR has been undertaken in order to identify receptors, as shown in **Figure 7.2 Air Quality Receptor Locations**, which could be affected by traffic emissions, as a result of the Proposed Scheme. As such, sensitive receptors within the 200m buffer from the Draft Order Limits have been reviewed and assessed on a qualitative basis.

7.4.17 Sensitive human receptors have been identified using the Ordnance Survey (OS) Address Base Plus dataset, a total of 469 human receptors (**Table 7.5** of **Appendix 7.1 Air Quality Assessment Methodology**) have been included in the assessment.

7.4.18 For ecological receptors, they are defined as those sites whose features have been designated as sensitive to air pollutants, either directly or indirectly. A total of 86 ecological habitats and therefore selected receptor points (**Table 7.6** of **Appendix 7.1 Air Quality Assessment Methodology**) have been identified in the assessment, and they are situated within a 200m buffer of the Draft Order Limits.

Construction related generator use/NRMM

7.4.19 No specific guidance exists on the definition of a study area from NRMM and generator emissions due to the large variation in potential effects from different types of sources during construction. For the purposes of this assessment, a study area of up to a 100m buffer from the Kiln Lane Substation (and associated construction compound comprising the Full Build of Kiln Lane Substation Scenario) and other compounds across the Draft Order Limits, have been considered appropriate given the potential size and duration of the operations to be undertaken and the likely size of plant required. Compound areas are of relevance to the assessment as these are the areas where activities in relation to the use of NRMM as well as generators are most likely to occur. As the exact locations of NRMM or generators are not known at this stage, a 100m buffer from the compounds have been considered as the study area. This study area also follows precedent set on other National Grid projects such as the Bramford to Twinstead Reinforcement project (Ref 23) and Norwich to Tilbury (Ref 24). Beyond this distance it is considered that the effect of any emissions on local air quality would be very limited. Construction compounds and associated study areas are presented in **Figure 7.4 NRMM Impacts.**

Operational onsite combustion plants

7.4.20 It is understood that there would be one unit of backup generator at the proposed Converter Station and Kiln Lane Substation respectively. These generators are expected to operate only during testing and maintenance. As the specifications of the generator and its operational hours are not available during the preparation of the PEIR, the extent of the study area will be determined in the ES stage. Should additional onsite combustion sources be identified in the ES stage, further review will be undertaken.

Assessment scenarios

7.4.21 **Chapter 5 EIA Approach and Methodology** of this PEIR, provides an overview of the Proposed Scheme's approach to the temporal scope (the time scales over which impacts may occur) of the EIA. This section describes the temporal scope for the assessment as it applies to the Air Quality.

7.4.22 The Full Build out of Kiln Lane Substation Scenario as described in **Chapter 5 EIA Approach and Methodology** has been assessed in this chapter, as it represents a worst-case scenario due to the greater size of the study area when compared with the Amendment to the Substation Scenario.

7.4.23 Both options with regards to the proposed Underground High Voltage Alternating Current (HVAC) Cable Corridor and High Voltage Direct Current (HVDC) Cable Corridor as described in **Chapter 5 EIA Approach and Methodology** have been considered in this chapter topic assessment. For the HVAC Cable Southern Route Option, the HVAC Cable Route LionLink Infrastructure and ducting for Sea Link Scenario has been assessed as the worst case. This approach enables the

assessment to identify potential effects across the whole geography of the Proposed Onshore Scheme.

7.4.24 The Air Quality assessment considers the following:

a. 2023 for baseline year;
b. 2030 for construction; and
c. 2032 for operation.

7.4.25 The baseline year is 2023, which is the most recent year for which local monitoring data is available. The peak year for construction of the Proposed Onshore Scheme is 2030, as set out in **Chapter 17 Traffic and Transport**. As construction traffic data is not available, a quantitative assessment with respect to construction traffic will be presented in the subsequent ES.

The year 2032 represents the first year of operation and maintenance. Baseline methodology

Data collection

7.4.26 Baseline data collection has been undertaken to obtain information relevant to the study area. This section provides the approach to collecting baseline data.

7.4.27 The following sources of data have been utilised to inform the baseline with respect to Air Quality (**Table 7.7**).

Table 7.7: Data sources used to inform the Air Quality assessment

Source of data	Baseline data
EA website (Ref 22)	Existing industrial processes within 2km of the Proposed Onshore Scheme.
Annual Air Quality Status Reports (Ref 27)	Existing AQMAs and local air quality monitoring data.
Defra UK AIR website (Ref 28)	To establish predicted background concentrations for NO_2, PM_{10} and $PM_{2.5}$ for the baseline year (2023), construction year (2030) and opening year (2032).

7.4.28 Baseline data collection for the Air Quality assessment has been desk based.

Assessment methodology

7.4.29 The approach to assessment is set out in **Chapter 5 EIA Approach and Methodology** of this PEIR. This has informed the approach used in this Air Quality assessment.

7.4.30 It is noted that the potential impacts associated with decommissioning activities are likely to be comparable to those for construction activities. Therefore, the effects and mitigation identified for the construction phase are considered to be suitable and representative for the decommissioning phase.

Construction dust assessment

7.4.31 The effects from construction of the Proposed Onshore Scheme have been assessed using the qualitative approach described in the latest dust guidance by the IAQM (Ref 20), which considers the potential for dust emissions from demolition, earthworks, construction and trackout[1] activities.

7.4.32 For each of these dust-generating activities, the guidance considers three separate effects:

a. Annoyance due to dust soiling;
b. Harm to ecological receptors; and
c. The risk of health effects due to changes in PM_{10} exposure.

7.4.33 The five-step construction dust assessment process is described in the IAQM guidance. This process starts with screening the need for a detailed assessment, based on the proximity of sensitive receptors and nature of the proposed works. If a detailed assessment is required, the next step involves defining the magnitude of the works and the sensitivity of the area and then defining the risk of impacts. The risk of dust impacts is determined by combining two key factors: the magnitude of dust emissions and the sensitivity of the area. The magnitude is assessed based on the scale and nature of the works (e.g. demolition, earthworks, construction, trackout), and is classified as small, medium or large. The sensitivity of the area is evaluated by considering the proximity and type of receptors, the baseline PM_{10} concentrations, and the number of receptors within defined distance bands. These two elements are then combined following IAQM guidance, to determine the overall risk of dust impacts. Once impacts and risk are defined the site-specific mitigation is identified and added to the Outline Code of Construction Practice (CoCP) where necessary (**Appendix 2.1 Outline Onshore CoCP**). The residual effects of the impacts with mitigation in place is then taken into consideration when determining the overall risk for the Proposed Onshore Scheme. Further details of the construction dust assessment methodology are provided in **Appendix 7.1 Air Quality Assessment Methodology.**

7.4.34 Sensitive receptors have been considered following the IAQM dust guidance (Ref 20) which sets out, within Box 6 of the document, the approach for identifying high, medium and low sensitivity receptors.

a. High sensitivity receptors would include areas where users can reasonably expect a high level of amenity such as residential properties, museums, schools, or businesses such as car showrooms or those with food preparation;
b. Medium sensitivity receptors are locations where a moderate level of amenity is expected, though not to the same extent as residential areas. Examples include places of work and public car parks, where occupants may be present

[1] IAQM guidance defines trackout as the transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when HDVs leave the construction/demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.

for extended periods but are generally less sensitive to dust and Air Quality impacts than at homes; and

c. Low sensitivity receptors would include areas where the enjoyment of amenity would not reasonably be expected. For example, playing fields with transient use, farmland, footpaths and roads.

7.4.35 The construction dust assessment is split into four geographical sections: Section A, B, C, and D. Each of these four sections can be seen in **Figure 2.1 Zoning Plan.** Each section has undergone the assessment criteria, as listed out in **Appendix 7.1 Air Quality Assessment Methodology**.

Construction traffic

7.4.36 In the absence of construction traffic data at this stage, a screening approach has been applied to ecological and sensitive human receptors within a buffer of the Draft Order Limits. The study area of this approach is detailed in **Paragraph 7.4.16**. This approach allows ecological and sensitive human receptors to be identified, screened in at PEIR, and reported in **Appendix 7.1 Air Quality Assessment Methodology.**

Construction related generator use/NRMM

7.4.37 Construction equipment will be used across the whole construction area. Details of the equipment type used for the Proposed Onshore Scheme is available; however, their locations and durations of use are not available for the PEIR. The PEIR, as a reasonable worst-case, assumes that generators would be present at all construction compounds.

7.4.38 As at this stage it has not been possible to conduct a full assessment of NRMM equipment as the location of the NRMM and the duration that they will be used is not yet known. This assessment will be carried out and reported in the ES. The assessment for the PEIR has focused on an overall risk of works taking place across the Draft Order Limits and assessment of impacts around compounds where generators and equipment would be used.

7.4.39 Receptors and their proximities to compounds (as detailed **in Figure 7.4 NRMM Impacts** and **Appendix 7.3 Air Quality Assessment Results**) have been identified and areas of risk, where additional mitigation is recommended, have been set out and will be reviewed in the ES.

7.4.40 This assessment considers any mitigation and commitments on emission standards for engines and plant to be used in construction, included within **Appendix 2.1 Outline Onshore CoCP**.

7.4.41 It is noted that the usage of generators and NRMM during construction is likely to be comparable to those used for decommissioning. Therefore, the impacts determined, and mitigation identified for the construction phase are considered to be suitable and representative for the decommissioning phase.

Operational onsite combustion plant

7.4.42 As mentioned in **Paragraph 7.4.20**, the information for the backup generators at the proposed Converter Station and Kiln Lane Substation is not available during the PEIR. Their locations, emission parameters, stack heights, and operational hour will be reviewed during the ES stage.

Assessment criteria

Air quality standards

7.4.43 The legally binding national air quality standards for the air pollutants assessed are outlined in **Table 7.8.**

Table 7.8: Air quality standards

Pollutant	Averaging period	Air quality standard
Human health		
Nitrogen dioxide (NO_2)	1-hour mean	200 µg/m^3, not to be exceeded more than 18 times a year (99.79th percentile)
	Annual mean	40 µg/m^3
Particulate matter (PM_{10})	Daily mean	50 µg/m^3, not to be exceeded more than 35 times a year (90.4th percentile)
	Annual mean	40 µg/m^3
Particulate matter ($PM_{2.5}$)	Annual mean	20 µg/m^3
		12 µg/m^3
		10 µg/m^3
Natural environment		
Oxides of nitrogen (NO_x)	Annual mean	30 µg/m^3
Ammonia (NH_3)	Annual mean	30 µg/m^3 (1 µg/m^3 where lichens or bryophytes are present)

Note: The current target for $PM_{2.5}$ is 20 µg/m^3, however the Environmental Targets (Fine Particular Matter) (England) Regulations 2023 (Ref 6), state that the annual mean level of $PM_{2.5}$ in ambient air must be equal to or less than 10 µg/m^3 ('the target level') by 31 December 2040. The Environmental Improvement Plan (2023) (Ref 6) sets an interim target of 12 µg/m^3, to be achieved by 31 January 2028.

7.4.44 In October 2024 Interim Planning Guidance (Ref 8) on the consideration of $PM_{2.5}$ targets was issued by the Department for Environment, Food and Rural Affairs (Defra) to support the implementation of the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (Ref 6) prior to the release of detailed Defra guidance for applicants and planning authorities. In addition to focusing solely on legal limit exceedances, the forthcoming guidance will require integration of $PM_{2.5}$ mitigation from the design stage to demonstrate how emissions and exposure are minimised. It is recommended that, pending

publication of the new guidance, applicants demonstrate there has been identification of key sources of $PM_{2.5}$ and that actions to quantify these and identify mitigation where necessary to minimise emissions, have been taken into account. This recommendation has been considered within the preliminary assessment (**Section 7.8**) and suitable mitigation measures to minimise $PM_{2.5}$ have been identified (**Table 7.11**). Should the new guidance come forth at the ES stage, this will be addressed and applied accordingly.

Receptor sensitivity

7.4.45 The construction dust assessment has determined the sensitivity of the area based on the guidance provided by the IAQM (Ref 20), as described in **Appendix 7.1 Air Quality Assessment Methodology**.

7.4.46 The construction traffic and generator/NRMM assessment has treated all sensitive human receptors equally. Sensitivity has been determined based on locations that reflect typical human exposure over the relevant averaging periods defined by Air Quality standards.

Impact magnitude

7.4.47 For construction dust, the risk of impacts is defined in line with the IAQM construction dust guidance IAQM (Ref 20), as described in **Appendix 7.1 Air Quality Assessment Methodology**.

7.4.48 Construction traffic and onsite combustion plant impact magnitude is determined using descriptions detailed in the EPUK and IAQM planning guidance (Ref 21), which provides an approach to determining the Air Quality impacts resulting from the Proposed Onshore Scheme.

7.4.49 Firstly, impact descriptors are determined based on the magnitude of incremental change as a proportion of the relevant assessment level, in this instance the annual mean NO_2, PM_{10} and $PM_{2.5}$ standards. The change is then examined in relation to the predicted pollutant concentrations in the assessment year and its relationship with the annual mean NO_2, PM_{10} and $PM_{2.5}$ standards.

7.4.50 The assessment framework for determining the impact at each of the assessed receptors is presented in **Table 7.9**.

7.4.51 It is noted that the EPUK and IAQM planning guidance (Ref 21) is under review for an update, the updated version is expected to be published in October 2025. This updated guidance will have a focus on emissions reduction, with consideration on screening thresholds, and method of defining impact descriptors. These updates will be reflected in the ES, once the new guidance is published.

Table 7.9: IAQM impact descriptors

Long-term average concentration at receptor in assessment year	% Change in concentration relative to the Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial
Note: Changes in pollutant concentrations of 0% i.e. <0.5% would be described as negligible				

Significance

7.4.52 The IAQM dust guidance (Ref 20) states that, with appropriate mitigation in place, the effect of construction dust would not be significant. This assessment has therefore focused on determining the risk of dust nuisance or harm to health and recommends an appropriate level of mitigation to not give rise to significant effects from construction dust.

7.4.53 In terms of construction traffic, the EPUK and IAQM planning guidance (Ref 21) provides an approach to determining the overall significance of local Air Quality effects arising from a project. The impact descriptors (**Table 7.9**) determined at each of the assessed receptors can then be used as a starting point to make a judgement on the overall significance of a project, however other influences would also need to be taken into account, such as:

a. The existing and future Air Quality in the absence of the Proposed Onshore Scheme;
b. The extent of current and future population exposure to the impacts; and
c. The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

7.4.54 For the construction traffic assessment, professional judgement has been used to determine the overall significance of effects of the Proposed Onshore Scheme, in the absence of construction traffic data for PEIR. This approach aligns with the IAQM and EPUK planning guidance, which provides impact descriptors (negligible, slight, moderate, substantial) based on the magnitude of change in pollutant concentrations relative to relevant Air Quality standards. In EIA practice, a 'moderate' or 'substantial' impact typically indicates a change that is either approaching or exceeding Air Quality standards, or affecting a large number of sensitive receptors, and is therefore considered likely to give rise to a significant effect. Conversely, a 'negligible' or 'slight' impact reflects a small change in pollutant concentrations that remains well below Air Quality standards

and is unlikely to materially affect human health or amenity and is therefore not considered significant.

7.4.55 For NRMM and generator emissions, the assessment is based on the EPUK and IAQM planning guidance (Ref 21), using a qualitative approach supported by assumptions about equipment type, emission standards (e.g. Stage V compliance), and operational duration. The methodology considers the proximity of sensitive receptors to emission sources, the likely dispersion of pollutants, and the scale of emissions relative to relevant AQALs. Where appropriate, the magnitude of impact is expressed as a percentage of the AQAL, and the significance is determined by considering both the process contribution and total predicted concentrations at receptor locations.

Cumulative assessment

7.4.56 **Chapter 28 Cumulative Effects** defines the methodology for the assessment of cumulative effects. The Air Quality assessment of intra- and inter-project cumulative effects will be carried out and reported within the ES.

7.4.57 The Zone of Influence for the inter-project cumulative effects assessment of Air Quality comprises a 2km buffer from the Draft Order Limits. This Zone of Influence will be reviewed at ES stage, as it may change once the ARN is established following screening of construction traffic data.

Guidance

7.4.58 Relevant guidance, specific to Air Quality, that has informed this PEIR and will inform the assessment within the ES, comprises:

a. Planning Practice Guidance (PPG) on Air Quality (Department for Levelling Up, Housing and Communities, 2019) (Ref 30);
b. Guidance on the Assessment on Dust from Demolition and Construction V2.2 (IAQM, 2024) (Ref 20);
c. Land Use Planning and Development Control: Planning for Air Quality (IAQM, 2017) (Ref 21);
d. Local Air Quality Management (LAQM) Technical guidance (TG22) (Defra, 2022) (Ref 29);
e. A guide to the assessment of Air Quality impacts on designated nature conservation sites (IAQM, 2020) (Ref 31);
f. Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulation (Natural England, 2018) (Ref 25); and
g. Advisory Note: Ecological Assessment of Air Quality Impacts (Chartered Institute of Ecology and Environmental Management (CIEEM), 2023) (Ref 32).

7.5 Assessment assumptions and limitations

7.5.1 This section provides a description of the assumptions and limitations to the Air Quality assessment.

Study area

7.5.2 The environmental assessment considers two consenting scenarios, as detailed in **Section 5.6** in **Chapter 5 EIA Approach and Methodology**. This chapter has considered both consenting scenarios and assessed the Proposed Full Build out of Kiln Lane Substation Scenario as it represents a worst-case scenario with respect to Air Quality, due to the greater geographical size of the study area when compared with the Amendments to Kiln Lane Substation Scenario.

7.5.3 It is acknowledged that whilst the alternative pylon and proposed Underground Cable Corridor locations from the proposed Limits of Deviation (LoD) are within the Draft Order Limits, this would have no new or different likely significant effects as a result of the infrastructure being placed in a different location within the Draft Order Limits and the Proposed Scheme's LoD. As such. the PEIR has accounted for the likely Air Quality effects within the entire Draft Order Limits, as a conservative assessment.

Construction dust

7.5.4 Dust effects have been assumed to occur across the whole Draft Order Limits; this is a conservative assumption included to cover all potential effects.

7.5.5 Where there is uncertainty on volumes of earthworks a 'large' magnitude has been assumed to provide a reasonable worst-case assessment.

Construction traffic

7.5.6 Construction traffic data is not available for the PEIR. Based on the available data, receptors that may experience potential Air Quality impacts have been identified. During ES, the construction traffic will be compared to the EPUK and IAQM planning guidance (Ref 21) to determine the assessment requirements. An assessment will then be undertaken if the screening criteria in **Paragraphs 7.4.13** and **7.4.15** are met.

Construction related generators and NRMM

7.5.7 Information on the location and duration of use of construction generators and NRMM is not available for the PEIR. As part of the assessment, construction related generators and NRMM will be reviewed and reported in the ES. The assessment will include, where possible information on the type, number, location, or operational hours of such machinery.

Operational onsite combustion plants

7.5.8 The specifications and emission parameters of the backup generators located at the proposed Converter Station and Kiln Lane Substation are not available during the preparation of the PEIR. Further review will be undertaken during the ES stage, and this will determine the assessment requirements as well as potential impacts and any resulting effects.

Decommissioning

7.5.9 It is assumed that the decommissioning activities are likely to be comparable to those for construction activities. Therefore, the impacts and effects determined, and mitigation identified for the construction phase are considered to be suitable and representative for the decommissioning phase.

7.6 Baseline conditions

7.6.1 To provide an assessment of the likely significance of the Proposed Onshore Scheme it is necessary to identify and understand the baseline conditions in the study area. This provides a reference point against which potential changes in Air Quality can be assessed.

7.6.2 This section provides a description of the existing and future Air Quality conditions in the 2 km study area from the Draft Order Limits, which is defined as the study area for the baseline assessment. Existing or baseline ambient Air Quality refers to the concentration of relevant substances that are already present in the environment. These are present from various sources, such as industrial processes, commercial and domestic activities, traffic, and natural sources.

7.6.3 The following sections provide high level details on the current baseline and further information is presented in **Appendix 7.2 Air Quality Baseline Data**.

Industrial processes

7.6.4 Industrial air pollution sources are regulated through a system of operating permits or authorisations, requiring stringent emission limits to be met and ensuring that any releases to the environment are minimised or rendered harmless. Regulated (or prescribed) industrial processes are classified as Part A or Part B processes, regulated through the Pollution Prevention and Control (PPC) system. The larger more polluting processes (Part A) are regulated by the EA (Ref 22), and the smaller fewer polluting ones (Part B) by the local authorities. Local authorities tend also to regulate only for emissions to air, whereas the EA regulates emissions to air, water and land.

7.6.5 There are three Part A industrial processes with emissions to air identified within the 2km buffer from the Draft Order Limits, as shown in **Table 7-1** in **Appendix 7.2 Air Quality Baseline Data**.

7.6.6 The contribution of all industrial processes to local Air Quality are assumed to be included in the background concentrations presented in **Section 7.4** of **Appendix 7.2 Air Quality Baseline Data**.

Road traffic

7.6.7 In recent decades, atmospheric emissions from transport on a national basis have grown to match or exceed other sources in respect to many pollutants, particularly in urban areas. The local Air Quality around the Proposed Onshore

Scheme is expected to be influenced by vehicle emissions, the notable roads are A12 Main Road and London Road, and the B1121, B1119, B1122, B1125, and B1387.

7.6.8 The contribution of traffic emissions to local Air Quality are expected to be included in the background concentrations presented in **Section 7.4** of **Appendix 7.2 Air Quality Baseline Data**.

Local air quality management

7.6.9 The Environment Act 2021 (Ref 1) requires local authorities to report to Defra on local Air Quality and local Air Quality management within their local authority area. This also requires an assessment of compliance with the relevant limit or standards values. The Draft Order Limits passes through one local authority, ESC.

7.6.10 Where Air Quality standards are not predicted to be met, local authorities must declare the area as an AQMA. In addition, local authorities are required to produce an Air Quality Action Plan (AQAP) which includes measures to improve Air Quality in the AQMA.

7.6.11 There are no AQMAs within 2km of the Draft Order Limits.

Local air quality monitoring

7.6.12 ESC has undertaken automatic and diffusion tube monitoring within its jurisdiction. Information from the monitoring has been taken from the 2024 ESC's Annual Status Report (Ref 27) and has been used to establish baseline Air Quality conditions. It should be noted that PM_{10} and $PM_{2.5}$ monitoring is not currently being undertaken in ESC. A summary of the local monitoring data is provided in the paragraphs that follow.

Automatic monitoring

7.6.13 There is a single automatic monitoring station operated by ESC. This automatic monitoring station is located within Woodbridge, which is beyond the 2km study area. Therefore, as a result of the distance from the monitoring station to the study area, the data is not considered to be relevant for determining baseline conditions in the study area.

Diffusion tube monitoring

7.6.14 Diffusion tube monitoring is a method used to measure the concentration of NO_2 in the air over a period of time. Diffusion tubes are widely used for monitoring Air Quality by local authorities.

7.6.15 There are five diffusion tubes within the study area. The details of these monitors are provided in **Figure 7.1 Air Quality Monitoring Locations**.

7.6.16 The annual mean NO_2 concentrations for 2019 to 2023 are shown in **Appendix 7.3 Air Quality Assessment Results**. No exceedances of the annual standard of 40µg/m^3 were recorded between 2019 and 2023.

7.6.17 The maximum 2023 NO_2 concentration was 21.8µg/m^3, recorded at the SAX 1 roadside diffusion tube site, located approximately 500 m west of the Draft Order Limits. This is well below the relevant annual mean standard.

Background pollutant concentrations

7.6.18 Background concentrations refer to the existing levels of pollution in the atmosphere, produced by a variety of stationary and non-stationary sources, such as roads and industrial processes. The Defra website (Ref 28) includes estimated background pollutant concentrations for NOx, NO_2, PM_{10} and $PM_{2.5}$ for each 1 km x 1 km OS Grid square in the UK. The full list of background concentrations from across the Draft Order Limits can be found in **Table 7.4** of **Appendix 7.2 Air Quality Baseline Data**.

7.6.19 The 2023 Defra background concentrations across the Draft Order Limits of NO_2 are well below the annual mean standard of 40µg/m^3. The highest background NO_2 concentration was 6.4µg/m^3, close to Darsham (Section C). The lowest NO_2 background concentration was 5.7µg/m^3, near Walberswick (Section D).

7.6.20 The 2023 Defra background concentrations across the Draft Order Limits of NOx (relevant to ecological receptors) are well below the annual mean standard of 30µg/m^3. The highest background concentration of NOx was 8.1µg/m^3 close to Darsham (Section C), the lowest concentration was 7.3µg/m^3 near to Walberswick (Section D).

7.6.21 The 2023 background concentrations of annual mean PM_{10} did not exceed the annual mean standard (40µg/m^3). The highest concentration within the Draft Order Limits was 15.4µg/m^3, across two grid squares which are close to Saxmundham (Section B) and Darsham (Section C). The lowest PM_{10} concentration was 11.6µg/m^3, near Walberswick (Section D).

7.6.22 The 2023 background concentrations of $PM_{2.5}$ also did not exceed the annual mean standard (10µg/m$^{3)}$. The highest concentration within the Draft Order Limits was 8.7µg/m^3 across two grid squares between Saxmundham and Sternfield (Section A) and the lowest was 7.6µg/m^3 near Walberswick (Section D).

Receptors – sensitive to construction dust

7.6.23 For the assessment of construction dust, the identification of receptors and their sensitivity to dust effects follows IAQM dust guidance (Ref 20).

7.6.24 The Draft Order Limits pass within 250m of residential receptors in settlements such as Friston, Sternfield, east Saxmundham, Annesons Corner, west Middleton north Darsham, south Blythburgh, and Walberswick. Sensitive receptors have been considered in the assessment using the OS Address Base layer data which provides a point reference for relevant properties and businesses, as well as areas of high amenity in the study area.

7.6.25 A number of high sensitivity (special protection areas (SPA)), medium sensitivity (sites of special scientific interest (SSSI)) and low sensitivity (national nature

reserves (NNR) and ancient woodland (AW)) ecological receptors have been identified within 50m of the Draft Order Limits. Details of the sensitive ecological receptors are provided in **Table 7.6** in **Appendix 7.1 Air Quality Assessment Results**.

7.6.26 The locations of the sensitive human and ecological receptors within 250m of the Draft Order Limits are shown in **Figure 7.3 Construction Dust Buffers**.

Table 7.10: Sensitive ecological receptors within 50 m of the Draft Order Limits

Designated sites	Ecological sites	Site name and Proposed Onshore Scheme section (as presented in Figure 2.1 Zoning Plan))
Statutory	SSSI	Minsmere-Walberswick Heaths and Marshes (D)
	Special Area of Conservation (SAC)	Southern North Sea (D)
		Minsmere to Walberswick Heaths and Marshes (D)
	SPA	Outer Thames Estuary (D)
Non-Statutory	Ancient/Veteran Trees (AVT)	T869S, T843S, T841S, T8092, T862S, T674S, T655S, T525S, T522S, T916S, T938S, T940S, T941S, T974S, T996S, T891S, T870S, T671S, T524S, T393S Tree (A)
		T861S Tree (B)
		TM43867182, TM44507279, TM43867182, TM44507279, 48499, and 48500 Tree (C)
	AW	Grove Wood (A)
		Coltsclose Pickle (A)
		Rudley's Grove (A)
		Hurtshall Park (A)
		Big/Common Woods (C)
		Hinton Round Spring (C)
	NNR	Suffolk Coast 446 (D)

Future baseline

7.6.27 The future baseline relates to known or anticipated changes to the current baseline in the future which should be assessed as part of the Proposed Onshore Scheme in the ES.

7.6.28 Even if the Proposed Onshore Scheme were not to come forward, there is likely to be a change to the future baseline conditions because of other factors and developments in proximity. The future baseline represents the conditions that would prevail without the Proposed Onshore Scheme in place.

7.6.29 Background air pollutant concentrations are currently available using the 2023 base year for projections (Ref 28). These are predicted to improve over time due to reductions in emissions resulting from:

a. reductions in transport emissions resulting from improvements in fuel efficiency and uptake in low emission vehicles;
b. general reduction in the use of fossil fuels;
c. reductions in pollutant emissions from agricultural sources due to improvements in management envisaged in the 2019 Clean Air Strategy (Ref 13); and
d. improved emission standards for NRMM and static generators.

7.6.30 The year of peak construction of the Proposed Scheme is 2030, and operation and maintenance is 2032. The Defra modelled concentrations for the future years 2030 and 2032 show reductions in both NO_2 and NO_x levels within the Draft Order Limits compared to the 2023 forecast. The forecast shows minimal changes in concentrations of PM_{10} and $PM_{2.5}$ between 2030 and 2032. Therefore, it is considered that the future baseline in relation to Air Quality would show reductions in pollutant concentrations from that described in the baseline.

7.7 Embedded design mitigation and control measures

Design and embedded mitigation measures

7.7.1 As described in **Chapter 2 Description of the Proposed Scheme**, a range of measures have been embedded into the Proposed Scheme design to avoid or reduce environmental effects. These mitigation measures form part of the design that has been assessed, which for Air Quality are listed in **Table 7.11**.

Control measures

7.7.2 Preliminary control measures are set out in **Appendix 2.1 Outline Onshore CoCP** which will manage the effects of construction. The measures of particular relevance to Air Quality are listed in **Table 7.11**.

Table 7.11: Design and embedded mitigation and control measures relevant to Air Quality

Commitment reference code	Design and embedded mitigation and control measure	Compliance mechanism
Measures to reduce construction emissions from plant and vehicles		
AQ:1	• Site layout to local machinery and dust-generating should be planned in advance of construction activities commencement; • Operate plant in accordance with manufacturer's recommendations; • Avoid plant idling; • Use construction vehicles which comply with current emissions standards; • Ensure good dispersal of exhaust emissions from the use of construction plant;	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measure	Compliance mechanism
	• Use enclosure of equivalent shielding equipment during activities where excessive quantities of dust would be generated; • Minimise construction traffic movement where practicable; • Design site access points to minimise queuing traffic; • Use mains electricity or battery-powered equipment where practicable, instead of diesel or petrol-powered; • Use of mechanical road sweepers combined with water sprays to suppress dust and clean hard-standing and roads; • Damp down dust-generating equipment and vehicles within the construction site; and • Cover materials, deliveries or loads when entering and leaving the construction site.	
AQ:2	Contractors will control and limit dust, air pollution, odour and exhaust emission during the construction works as far as reasonably practicable and in accordance with best practicable means (BPM), including: • Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance: IAQM, January 2024, (Ref 20). The full list of mitigation measures for construction dust is presented in **Appendix 2.1 Outline Onshore CoCP**; • Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance: IAQM, January 2024, (Ref 20), also sets out a hierarchal approach to emission mitigation. This is presented in **Appendix 2.1 Outline Onshore CoCP;** • Guidance on Monitoring in the Vicinity of Demolition and Construction Sites: IAQM, October 2016 (Ref 33); and • Currently available standards for NRMM: Greater London Authority (Ref 34), including use of NRMM that comply with the EU Stage IV as a minimum, for equipment of a power rating above 56 kW. Constant speed engines such as generators must comply with the EU Stage V.	Best practice control measures / Outline Onshore CoCP
Monitoring of dust and particulate matter during construction (if required)		
AQ3	Subject to consultation with the Local Planning Authorities, monitoring of dust and particulate matter may be required. The measures would be required should monitoring be undertaken: • construction site inspections; • inspection procedures for areas adjacent to the construction site to visually assess any dust and air pollution which may be generated, using a daily log;	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measure	Compliance mechanism
	• plans for undertaking continuous automatic monitoring of airborne dust and setting a relevant construction site action level (defined as a measurement threshold above which investigation will be required); • reference to inspection and maintenance schedules for construction vehicles, plant and machinery; and • inspection procedures relating to the level of traffic movements, use and condition of haul routes.	

7.8 Assessment of effects

7.8.1 This section presents the preliminary assessment of likely significant effects on Air Quality resulting from the construction, operation and maintenance, and decommissioning of the Proposed Onshore Scheme. The likely significant effects of the Proposed Onshore Scheme are identified taking into account the embedded design mitigation and control measures.

Construction phase

Construction dust

7.8.2 The sensitive residential and ecological receptors have been identified in previous sections, information can be found in **Paragraph 7.6.24** and **7.6.25**.

7.8.3 The individual construction dust risk assessment for each Section of the Proposed Onshore Scheme has followed the methodology in **Section 7.2** of **Appendix 7.1 Air Quality Assessment Methodology** and the full results can be found in **Appendix 7.3 Air Quality Assessment Results**.

7.8.4 Combining the dust emissions magnitude and area sensitivities, the overall risk of impacts with no applied additional mitigation for each construction activity has been determined. To summarise the assessment set out in **Appendix 7.3**, the potential risk of dust soiling is medium for demolition and high for earthworks, construction, and trackout (deposition of dust and dirt from construction sites onto public roads by construction vehicles). For human health and ecological risks, they are negligible for demolition and low for earthworks, construction and trackout.

7.8.5 Due to the risks identified, without applying additional mitigation measures, there would be the potential for significant effects. However, proposed standard control measures for high-risk sites are set out in **Appendix 2.1 Outline Onshore CoCP**. Following the implementation of the proposed standard control measures, the effects of construction on dust soiling, human health and ecological effects, are anticipated to be **negligible** and **not significant**, in line with IAQM dust guidance (Ref 20).

Construction traffic

7.8.6 The construction traffic volumes associated with the Proposed Onshore Scheme were not available during the preparation of the PEIR, and therefore the resulting impacts and effects have not been reported at this time. However, a high-level review for the construction traffic has been undertaken in **Chapter 17 Traffic and Transport** and it is understood the construction of the Proposed Onshore Scheme would result in changes in daily traffic follows due to workers and construction vehicles accessing the site. Full details for the roads that may be impacted during construction are detailed in **Chapter 17 Traffic and Transport**.

7.8.7 The high-level traffic data has been reviewed, it shows that congestion is possible at certain junctions/roads, which in air quality terms could lead to an increase in emissions. However, at this point it is not possible to quantify the impact as the changes in concentrations will depend on the traffic volumes and distance to receptor.

7.8.8 As the traffic flows due to construction have not been quantified, when available the traffic data will be reviewed against the criteria detailed in the EPUK and IAQM planning (Ref 21), which is included in **Paragraphs 7.4.13** and **7.4.15**, and a detailed assessment for human and ecological receptors will be undertaken if the above mentioned screening criteria is met, in the ES stage.

7.8.9 For the purposes of understanding the potential risk as a result of the construction traffic emissions due to the Proposed Onshore Scheme, human and ecological receptors within the study area (defined in **Paragraph 7.4.16**) have been identified and presented in **Appendix 7.1 Air Quality Assessment Methodology**. These receptors have the potential to be affected by the vehicle emissions due to construction traffic, and their impacts will be assessed during the ES stage. The list of ecological receptors has been prepared to provide early indication of receptors that could be at potential risk due to the increase of construction traffic.

Construction related generator and NRMM

7.8.10 Generator effects can 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 relevant abatement technology. The need to apply mitigation at specific locations will be determined in the ES.

7.8.11 No specific data on the exact location of generators and NRMM is available at this stage of the Proposed Onshore Scheme design. The numbers of units to be used and estimates of daily use have not yet been determined for the PEIR stage but will be available at the ES. Work is likely to be carried out along the length of the Proposed Onshore Scheme with concentrations of activity around compounds and work areas.

7.8.12 Locations where compounds are within 100m of receptors have been reviewed and the results are provided in **Table 7.7** in **Appendix 7.3 Air Quality Assessment Results** and **Figure 7.4 NRMM Impacts**.

7.8.13 Although the information for generators and NRMM is limited during the PEIR stage, the use of construction NRMM is unlikely to result in significant effects on local Air Quality according to the guidance from LAQM (TG22) paragraph 7.30 (Ref 29). This guidance is provided based on previous assessments of the emissions of NRMM, which determined that emissions are unlikely to make a significant effect on local Air Quality with suitable controls and site management in place. Standard mitigation measures in the Outline Onshore CoCP (**Appendix 2.1 Outline Onshore CoCP**) states that NRMM and plant, would meet the European Stage VI engine emission standards for generators (Ref 35). Therefore, the effects due to generators and NRMM usage are likely to be **negligible** and **not significant**.

7.8.14 For ecological receptors, as the generators and NRMM operation would be intermittent and occur for sporadic periods at differing locations within the Draft Order Limits throughout the temporary construction stage. It is not considered that emitted pollutants would occur over a long enough time to have a significant effect.

7.8.15 Therefore, it is considered that effects as a result of emissions from construction equipment and plant are likely to be **negligible** and **not significant**, this will be reviewed in the ES.

Operational phase

Operational onsite combustion sources

7.8.16 The information for the backup generator at the proposed Converter Station and Kiln Lane Substation is not available during the preparation of the PEIR. Therefore, effects associated with emissions operational onsite combustion sources will be reviewed and determined in the ES.

Decommissioning

7.8.17 The works which would take place during decommissioning of the Proposed Onshore Scheme are expected to be in similar magnitude (or less extensive) to those required for construction dust. The assessment presented for construction dust air quality effects is therefore representative of the decommissioning phase. In line with the construction dust assessment and with the implementation of the proposed embedded mitigation and control measures, the likely effects during decommissioning, are anticipated to be **negligible** and **not significant**,

7.9 Mitigation, monitoring and enhancement

7.9.1 Mitigation measures are defined in **Chapter 5 EIA Approach and Methodology** of this PEIR, with embedded control measures for Air Quality being presented in **Section 7.7**.

Additional mitigation and enhancement

7.9.2 At this stage, no likely significant effects have been identified and therefore no further mitigation measures have been identified.

Monitoring

7.9.3 At this stage, no likely significant effects have been identified that would require monitoring.

7.10 Summary of residual effects

7.10.1 **Table 7.12**, **Table 7.13** and **Table 7.14** provides a summary of the residual effects relating to the construction, operation and maintenance, and decommissioning of the Proposed Onshore Scheme with regard to Air Quality receptors.

7.10.2 The preliminary assessment has concluded that residual effects for construction dust and the use of generators and NRMM during construction and decommissioning, would be **not significant** for the Proposed Onshore Scheme.

7.10.3 Limited data for construction traffic and onsite combustion plant is available during the preparation, Air Quality impacts for those elements will be reviewed and assessed during the ES stage.

Table 7.12: Summary of assessment of likely significant effects during construction

Receptor	Environmental effect without further mitigation	Additional mitigation	Residual effect
Human and ecological receptors	Dust – **negligible** (**not significant**)	None identified	**Negligible** and **not significant**
Human and ecological receptors	Generators and NRMM – **negligible** (**not significant**)	None identified	**Negligible** and **not significant**
Human and ecological receptors	Construction traffic – to be determined during ES stage	To be determined during ES stage	To be determined during ES stage

Table 7.13: Summary of assessment of likely significant effects during operation and maintenance

Receptor	Environmental effect without further mitigation	Additional mitigation	Residual effect
Human and ecological receptors	Onsite combustion plants – to be determined during ES stage	To be determined during ES stage	To be determined during ES stage

Table 7.14: Summary of assessment of likely significant effects during decommissioning

Receptor	Environmental effect without further mitigation	Additional Mitigation	Residual effect
Human and ecological receptors	Dust – **negligible** (**not significant**)	None identified	**Negligible** and **not significant**
Human receptors	Generators and NRMM – **negligible** (**not significant**)	None identified	**Negligible** and **not significant**
Human and ecological receptors	Traffic – to be determined during ES stage	To be determined during ES stage	To be determined during ES stage

Topic Glossary and Abbreviations

Acronym/ Phrase/ Abbreviation	Definition
µg/m^3	Micrograms per cubic meter
Ancient Woodland	Land that has been continually wooded since at least 1600 in England. Regarded as 'irreplaceable habitat' in national planning guidance. Ancient woodland greater than 2ha is recorded on the Natural England Ancient Woodland Inventory.
Annual average daily traffic (AADT) flow	24-hour traffic count data averaged for all the days in the year i.e. the total traffic flow on a road for a year divided by 365.
APIS	Air Pollution Information System
AQAL	Air Quality Assessment Level
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
ARN	Affected Road Network
AVT	Ancient/Veteran Tree
AW	Ancient Woodland
CIEEM	Chartered Institute of Ecology and Environmental Management
CoCP	Code of Construction Practice
Construction route	These are the roads on the local road network that would be used by construction vehicles between the strategic road network and the access points within the Order Limits.
CWS	County Wildlife Site
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
Dust emission magnitude	The potential scale of dust emissions as a result of construction activities, classified based on the nature, scale and intensity of the works being undertaken across four key construction phases (demolition, earthworks, construction and track-out).
EA	Environment Agency
Effect	The consequence of an impact.
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
ES	Environmental Statement
ESC	East Suffolk Council
Habitat	The natural home or environment of an animal, plant, or other organism.

Acronym/ Phrase/ Abbreviation	Definition
Haul Road	Another term used for the temporary access route, which is a temporary route built to carry construction vehicles within the Order Limits
HDV	Heavy-Duty Vehicles
Heavy Duty Vehicles (HDV)	Vehicles weighing more than 3,500 kg.
IAQM	Institute of Air Quality Management
Impact	Described as a change in pollutant concentrations or dust deposition
LAQM	Local Air Quality Management
Light Duty Vehicles (LDV)	Vehicles weighing 3,500 kg or less.
LoD	Limits of Deviation
Mitigation	The action of reducing the severity and magnitude of change (impact) to the environment. Measures to avoid, reduce, remedy or compensate for significant adverse effects.
NH_3	Ammonia
NNR	National Nature Reserve
NO_2	Nitrogen Dioxide
Non-statutory designated site	A site designated at a local level for its biodiversity and/or geological value. These are not underpinned by legislation.
NOx	Nitrogen Oxide
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRMM	Non-Road Mobile Machinery
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PM_{10}	Particulate Matter (10 micrometres or less in diameter)
	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less.
$PM_{2.5}$	Particulate Matter (2.5 micrometres or less in diameter)
	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less.
PPG	Planning Practice Guidance
Proposed Scheme Section	Geographical 'sections' have been identified that break the Proposed Scheme down into smaller units for ease of description within the documentation.
Receptor	The physical resource or user group that would respond to an effect e.g. somebody or something adversely affected by a pollutant.
SAC	Special Area of Conservation

Acronym/ Phrase/ Abbreviation	Definition
Sensitivity	A term applied to specific receptors, combing judgements of the susceptibility of the receptors to the specific type of change or development proposed and the value related to that receptor.
SoS	Secretary of State
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WHO	World Health Organisation

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