The Great Grid Upgrade

North Humber to High Marnham

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North Humber to High Marnham

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15. Air Quality

15.1 Introduction

15.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant air quality effects that could result from the North Humber to High Marnham Project (the Project) as described in **Application Document 6.4 Chapter 4 Description of the Project**.

15.1.2 This chapter describes relevant legislation and policy, the scope of the assessment, the methodology used, the datasets that have informed the assessment, the baseline conditions, mitigation measures and the residual significant effects that could result from the Project.

15.1.3 The Order Limits, which illustrate the boundary of the Project, are shown on **Application Document 6.1.F1 Figure 1.1 Project Location and Route Sections**.

15.1.4 This chapter should be read in conjunction with the following ES chapters:

- **Application Document 6.4 Chapter 4 Description of the Project**;
- **Application Document 6.5 Chapter 5 EIA Assessment Approach and Methodology**;
- **Application Document 6.8 Chapter 8 Ecology**;
- **Application Document 6.14 Chapter 14 Traffic and Transport**;
- **Application Document 6.18 Chapter 18 Health and Wellbeing**;
- **Application Document 6.20 Chapter 20 Intra-project Cumulative Effects**; and
- **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**.

15.1.5 This chapter is supported by the following figures:

- **Application Document 6.15.F1 Figure 15.1 Air Quality Construction Dust Study Area**;
- **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**;
- **Application Document 6.15.F3 Figure 15.3 Air Quality NRMM Emissions Study Area**; and
- **Application Document 6.15.F4 Figure 15.4 Air Quality Baseline**.

15.1.6 This chapter is supported by the following appendices:

- **Application Document 6.15.A1 Appendix 15.1 Regional and Local Planning Policy**;
- **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**; and

- **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

15.1.7 This chapter is supported by the following application documents:

- **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report**;
- **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**;
- **Application Document 6.5.A3 Appendix 5.3 Scoping Response Tables**;
- **Application Document 6.16.A3 Appendix 16.3 Construction Noise and Vibration Data**;
- **Application Document 7.2 Outline Code of Construction Practice**;
- **Application Document 7.3 Register of Environmental Actions and Commitments**;
- **Application Document 7.4 Outline Construction Traffic Management Plan**; and
- **Application Document 7.5 Outline Soil Management Plan**.

15.2 Regulatory and Planning Context

15.2.1 This section sets out the legislation and planning policy that is relevant to the air quality assessment. A full review of compliance with relevant national, regional and local planning policy is provided within **Application Document 5.5 Planning Statement** submitted as part of the application for development consent.

15.2.2 **Application Document 6.2 Chapter 2 Legislation and Policy Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy and planning guidance relevant to the assessment of air quality effects of the Project is presented below.

Legislation

Directive 2008/50/EC on ambient air quality and cleaner air in Europe

15.2.3 Prior to the UK's withdrawal from the European Union (EU), the EU Directive on ambient air quality (2008/50/EC) (The European Parliament and the Council of the European Union, 2008) set out a range of mandatory limit values for different pollutants including nitrogen dioxide (NO_2) and particulate matter less than 10 microns in diameter (PM_{10}) (Article 13 and Annex XI). The Directive also established target values, exposure concentration obligations and exposure reduction targets for particulate matter less than 2.5 microns (µm) in diameter ($PM_{2.5}$) (Articles 15 and 16 and Annex XIV). Critical levels for the protection of vegetation and natural ecosystems are set out in Annex XIII. Although no longer directly applicable in the UK following EU Exit, the Directive formed the basis of subsequent UK air quality legislation.

Environmental Protection Act 1990

15.2.4 Part III of the Environmental Protection Act 1990 (HM Government, 1990) provides the statutory nuisance regime, which can apply to dust where it is prejudicial to health or constitutes a nuisance. A statutory nuisance in relation to dust and deposits is defined under Section 79 of the act as follows:

"(d) Any dust, steam, smell or other effluvia arising on industrial, trade, or business premises and being prejudicial to health or a nuisance.

(e) any accumulation or deposit which is prejudicial to health or a nuisance."

15.2.5 Under the provisions of the Environmental Protection Act, where a local authority is satisfied that a statutory nuisance exists, it is under a mandatory duty to serve an abatement notice requiring abatement or cessation of one or more activities deemed to be causing the nuisance. In the absence of any kind of standard, identification of a nuisance is dependent on the professional judgment of the local authority as to whether Best Practicable Means (BPM) are being employed to control emissions.

Environment Act 1995

15.2.6 Part IV of the Environment Act 1995 (HM Government, 1995) Section 80 requires the UK Government to produce a national Air Quality Strategy (AQS), which contains standards, objectives and measures for improving ambient air quality. Under the Local Air Quality Management (LAQM) regime set out in the Environment Act 1995 within Sections 82 to 84, local authorities have a duty to make periodic reviews of local air quality against the AQS objectives. Where the air quality standards are not being met, a local authority is required to designate an Air Quality Management Area (AQMA). The Environment Act 1995 remains the principal legislative basis for local air quality management in the UK.

Environment Act 2021

15.2.7 The Environment Act 2021 (HM Government, 2021) works alongside the foundational LAQM framework established through the Environment Act 1995 (HM Government, 1995), adding stricter long-term air quality targets, particularly around $PM_{2.5}$. Part 1 of the Environment Act 2021 (HM Government, 2021) requires the Secretary of State (SoS) to make regulations setting a legally binding target to reduce $PM_{2.5}$ in ambient air.

Air Quality (England) Regulations 2000

15.2.8 The Air Quality (England) Regulations 2000 (HM Government, 2000) and The Air Quality (England) (Amendment) Regulations 2002 (HM Government, 2002) set national air quality objective levels for local authorities to meet in England. These objectives underpin the LAQM process undertaken by local authorities in England.

Air Quality (Standards) Regulations 2010

15.2.9 The Air Quality Standards Regulations 2010 (HM Government, 2010) implement EU Directive (2008/50/EC) (The European Parliament and the Council of the European Union, 2008) on ambient air quality and cleaner air for Europe.

15.2.10 Law derived from the EU has been converted into domestic law following the UK's withdrawal from the EU. The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (HM Government, 2019) made amendments to the Air Quality

Standards Regulations 2010 (HM Government, 2010) to transpose provisions of the EU Ambient Air Quality Directive (2008/50/EC) (The European Parliament and the Council of the European Union, 2008) into UK law. The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (HM Government, 2020) amended Schedule 2 of the Air Quality Standards Regulations 2010 (HM Government, 2010) to reduce the $PM_{2.5}$ limit value from 25 µg/m^3 to 20 µg/m^3 in line with the requirement of the EU Directive (2008/50/EC) (The European Parliament and the Council of the European Union, 2008).

Non-Road Mobile Machinery Regulations 2018

15.2.11 The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 (HM Government, 2018) set out gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for Non-Road Mobile Machinery (NRMM).

Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

15.2.12 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (HM Government, 2023) set the following targets for $PM_{2.5}$:

- Annual Mean Concentration Target ('concentration target') – a target of ten micrograms per cubic metre (µg/m^3) to be met across England by 2040; and
- Population Exposure Reduction Target ('exposure reduction target') – a 35% reduction in population exposure by 2040 (compared to a base year of 2018).

15.2.13 The main pollutants of concern with respect to compliance are nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM_{10}) and $PM_{2.5}$. The AQS objectives, limit values and target values for the protection of human health that are applicable to this assessment are presented in Table 15.1. The term 'Air Quality Assessment Level' (AQAL) is used hereon throughout this chapter to include all AQS objectives, limit values, and target values applicable to the air quality assessment. Pollutant concentrations are displayed in micrograms per cubic metre (µg/m^3). The AQALs only apply where members of the public are likely to be regularly present for the averaging time of the objective (i.e., where people will be exposed to pollutants).

Table 15.1 – Relevant air quality assessment levels for the protection of human health

Pollutant	Concentration (µg/m^3)	Averaging period
NO_2	200	1-hour mean (not to be exceeded more than 18 times per year)
	40	Annual mean
PM_{10}	50	24-hour mean (not to be exceeded more than 35 times per year)
	40	Annual mean
$PM_{2.5}$	20	Annual mean
	10	Annual mean concentration target to be met across England by 2040.

15.2.14 The AQS critical level for the protection of vegetation and ecosystems (HM Government, 2010) applicable to this assessment is presented in Table 15.2, referred to as AQAL hereon.

Table 15.2 – Relevant air quality assessment level for the protection of vegetation and ecosystems

Pollutant	Concentration (µg/m^3)	Averaging period
Oxides of nitrogen (NO_x)	30	One calendar year

National Policy

National Policy Statements

15.2.15 National Policy Statements (NPSs) set out the primary policy tests against which the application for a Development Consent Order (DCO) for the Project will be considered.

15.2.16 Table 15.3 provides details of the elements of the Overarching NPS for Energy (EN-1) (Department for Energy Security & Net Zero, 2025), referred to hereafter as NPS EN-1, that are relevant to the assessment of the Project on air quality and how and where related information is provided in the ES and the application.

15.2.17 There are no elements of the NPS for Electricity Networks Infrastructure (EN-5) (Department for Energy Security & Net Zero, 2025) that are relevant to air quality.

Table 15.3 – NPS EN-1 sections relevant to air quality

NPS EN-1 section	Where this is covered in the application
5.2.1 (part) 'Energy infrastructure development can have adverse effects on air quality. The construction, operation and decommissioning phases can involve emissions to air which could lead to adverse impacts on health, on protected species and habitats, or on the wider countryside and species.'	The assessment presented within this chapter has considered the construction of the Project, in terms of emissions to air on both human and ecological receptors noting that, as explained in section 15.3 of this chapter, operation, maintenance, and decommissioning have been scoped out. The assessment of these effects is detailed in section 15.9 of this chapter.
5.2.2 'Legal limits for pollutants in ambient air are set out in the Air Quality Standards Regulations 2010 and for England, national objectives set out in the Air Quality (England) Regulations 2000 reiterated in the Air Quality Strategy…. In addition, two fine particulate matter ($PM_{2.5}$) targets were set under the Environment Act 2021 for England – an annual mean concentration target and a population exposure target.	The AQALs relevant for this assessment are detailed in Table 15.1 and Table 15.2 of this chapter.

NPS EN-1 section	Where this is covered in the application
Internationally agreed emissions commitments are set in the National Emission Ceilings Regulations 2018 and establish limits for total UK emissions of key pollutants.'	
5.2.3 'For many air pollutants there is not a threshold below which there is no health impact so it is important that energy infrastructure schemes consider not just how a scheme may impact statutory air quality limits, objectives or targets but also measures to mitigate all emissions in order to minimise human exposure to air pollution, especially for those who are more susceptible to the impacts of poor air quality.'	Mitigation measures have been proposed to minimise human exposure to air pollution, as summarised in section 15.8 of this chapter.
5.2.4 (part) '...a particular effect of air emissions from some energy infrastructure may be eutrophication, which is the excessive enrichment of nutrients in the environment. Eutrophication from air pollution results mainly from emissions of NOx and ammonia.'	The assessment of air quality has considered air emissions from the Project and their effect on ecological receptors, as detailed in section 15.9 of this chapter.
5.2.8 'Where the project is likely to have adverse effects on air quality the applicant should undertake an assessment of the impacts of the proposed project as part of the ES.'	An assessment has been undertaken to determine if the Project is likely to have adverse effects on air quality. The results of this assessment are presented in section 15.9.
5.2.9 '*The ES should describe:* • *existing air quality concentrations and the relative change in air quality from existing levels;* • *any significant air quality effects, mitigation action taken and any residual effects, distinguishing between the project stages and taking account of any significant emissions from any road traffic generated by the project;* • *the predicted absolute emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied; and* • *any potential eutrophication impacts.'*	Baseline air quality conditions have been considered in section 15.6. Mitigation measures, where required, are summarised in section 15.8. An assessment of air quality impacts has been undertaken to determine if the Project is likely to have significant adverse effects on air quality for each phase of the Project; the assessment findings are presented in section 15.9. Detailed dispersion modelling has been undertaken to predict absolute emissions concentrations and the change in air quality as a result of the Project's construction traffic.

NPS EN-1 section	Where this is covered in the application
5.2.10 (part) '*...applicants should consider the Environment Targets (Fine Particulate Matter) (England) Regulations 2022 and associated Defra guidance.*'	All the relevant legislation and guidance has been considered, as outlined in section 15.2 and section 15.4 respectively.
5.2.11 '*Defra publishes future national projections of air quality based on estimates of future levels of emissions, traffic, and vehicle fleet. Projections are updated as the evidence base changes and the applicant should ensure these are current at the point of an application. The applicant's assessment should be consistent with this but may include more detailed modelling and evaluation to demonstrate local and national impacts. If an applicant believes they have robust additional supporting evidence, to the extent they could affect the conclusions of the assessment, they should include this in their representations to the Examining Authority along with the source*.'	Current and future Department for Environment, Food and Rural Affairs (Defra) air quality background concentrations as well as local air quality monitoring have been used in the assessment of air quality effects to determine if the Project is likely to have significant adverse impacts on air quality. The background concentrations are reported in section 15.6.
5.2.12 '*Where a proposed development is likely to lead to a breach of any relevant statutory air quality limits, objectives or targets, or affect the ability of a non-compliant area to achieve compliance within the timescales set out in the most recent relevant air quality plan/strategy at the time of the decision, the applicant should work with the relevant authorities to secure appropriate mitigation measures to ensure that those statutory limits, objectives or targets are not breached.*'	The assessment of air quality has considered whether the Project is likely to lead to a breach of the relevant AQALs or affect the ability of a non-compliant area to achieve compliance, as detailed in section 15.9. Mitigation measures, where required, are summarised in section 15.8 of this chapter and set out in **Application Document 7.3 Register of Environmental Actions and Commitments**.
5.2.13 '*The Secretary of State should consider whether mitigation measures are needed both for operational and construction emissions over and above any which may form part of the project application. A construction management plan may help codify mitigation at this stage. In doing so the Secretary of State should have regard to the Air Quality Strategy in England, or the Clean Air Plan for Wales in Wales, or any successors to these and should consider relevant advice within Local Air Quality Management guidance and $PM_{2.5}$ targets guidance*.'	Mitigation measures, where required, are summarised in section 15.8 and set out in **Application Document 7.3 Register of Environmental Actions and Commitments**.

NPS EN-1 section	Where this is covered in the application
5.2.16 '*The Secretary of State should give air quality considerations substantial weight where a project would lead to a deterioration in air quality. This could for example include where an area breaches any national air quality limits or statutory air quality objectives. However, air quality considerations will also be important where substantial changes in air quality levels are expected, even if this does not lead to any breaches of statutory limits, objectives or targets.*'	An assessment of air quality effects has been undertaken to determine if the Project is likely to have significant adverse impacts on air quality and whether there would be a breach of statutory limits, objectives or targets; this is presented in section 15.9. Mitigation measures, where required, are summarised in section 15.8 of this chapter and set out in **Application Document 7.3 Register of Environmental Actions and Commitments**.
5.7.5 '*The applicant should assess the potential for insect infestation and emissions of odour, dust, steam, smoke, and artificial light to have a detrimental impact on amenity, as part of the ES.*'	An assessment of air quality effects has been undertaken to determine if the Project is likely to have significant adverse impacts on air quality; this is presented in section 15.9. Mitigation measures, where required, are summarised in section 15.8 of this chapter and set out in **Application Document 7.3 Register of Environmental Actions and Commitments**. A summary of all potential sources of statutory nuisance, including those relating to air quality, is provided in **Application Document 5.3 Statement of Statutory Nuisance**.

National Planning Policy Framework

15.2.18 The National Planning Policy Framework (NPPF) as revised in August 2026 (Ministry of Housing, Communities & Local Government, 2026) sets out the Government's planning policies for England and how these are expected to be applied in plan-making and decision-making. The NPPF (Ministry of Housing, Communities & Local Government, 2026) has a strong emphasis on sustainable development, with a presumption in favour of such development. Although the NPSs set out the primary policy tests for the Project, the NPPF (Ministry of Housing, Communities & Local Government, 2026) may also be an important and relevant to the consideration of the Project by the SoS.

15.2.19 Table 15.4 below provides details of the elements of the NPPF (Ministry of Housing, Communities & Local Government, 2026) that relate to the air quality assessment, and how and where they are covered in the ES and application.

Table 15.4 – NPPF sections relevant to air quality

NPPF section	Where this is covered in the application
'P3: Living Conditions and Pollution 1. *Development proposals should be appropriate for their location, taking into account the likely effects*	All the relevant legislation and guidance has been considered, as outlined in section 15.2 and section 15.4, respectively.

NPPF section	Where this is covered in the application
(including cumulative effects) of pollution on health, living conditions and the natural environment… 2. *…development proposals should… b. Not give rise to…an unacceptable level of air pollution on or beyond the site. Adverse impacts of this nature should be avoided where possible, or else mitigated to an acceptable degree... c. …sustain and contribute to compliance with relevant limit values or national objectives and targets for air pollutants, including $PM_{2.5}$. Development proposals should take account of Air Quality Management Areas and be consistent with the objectives of relevant Air Quality Action Plans, Clean Air Plans and Local Air Quality Strategies.'*	An assessment of air quality effects has been undertaken to determine if the Project is likely to have significant impacts on air quality and is presented in section 15.9. Mitigation measures, where required, are summarised in section 15.8 of this chapter.
'P1: Planning for Clean and Safe Places …1.a.iii Development proposals will not cause unacceptable levels of pollution, either alone or in combination with other pollution sources, taking into account communities which may be particularly vulnerable to its effects, such as children and older people, as well as habitats and species which may be vulnerable to pollution… *…1.b Consider any wider opportunities to reduce air, water, soil, noise or other forms of pollution, and contribute to compliance with national and local environmental targets and objectives, through the spatial strategy and policies for specific parts of the plan area (such as by identifying opportunities for strategic nature-based solutions).'…*	An assessment of air quality effects has been undertaken to determine if the Project is likely to affect air quality and is presented in section 15.9. The embedded mitigation and control measures described in section 15.8 have been developed to minimise emissions during construction and operation and to avoid unacceptable air quality effects. Through the application of embedded mitigation measures and good practice controls, the Project seeks to minimise emissions where practicable. The assessment demonstrates that the Project would not undermine compliance with relevant air quality objectives or targets. Project measures associated with nature-based solutions and biodiversity benefits are set out in **Application Document 6.8 Chapter 8 Ecology** and net gain as set out in **Application Document 7.1 Biodiversity Net Gain Report**. The Project proposes to deliver a minimum of 10 per cent Biodiversity Net Gain (BNG), with potential for wider environmental and societal benefits, on a voluntary basis. Detail on the Project's approach to voluntary BNG is provided in **Application Document 7.20 Design Development Report – 2025** and **Application Document 7.1 Biodiversity Net Gain Report**.

National Planning Practice Guidance

15.2.20 The NPPF (Ministry of Housing, Communities & Local Government, 2026) is supported by Planning Practice Guidance (PPG) which was first published in March 2014. This guidance is updated on a regular basis and provides advice on a range of topics related to the implementation of NPPF (Ministry of Housing, Communities & Local Government, 2026) policies. The PPG that is relevant to the air quality assessment is summarised below.

Planning Practice Guidance for Air Quality

15.2.21 The PPG for Air Quality (Ministry of Housing, Communities & Local Government, 2019) provides guidance on how planning can take account of the impact of new development on air quality. It includes guidance relating to planning and air quality; the role of local plans with regard to air quality; when air quality is likely to be relevant to a planning decision; what should be included within an air quality assessment and how impacts on air quality can be mitigated.

Environmental Improvement Plan

15.2.22 The Environmental Improvement Plan 2025 (Department of Food & Rural Affairs , 2025) updates the UK's statutory environmental planning framework and revises the 2023 Environment Improvement Plan. It strengthens air-quality targets, clarifies delivery responsibilities and provides more detail on how the government intends to meet Environment Act 2021 (HM Government, 2021) obligations.

Regional and Local Policy

15.2.23 **Application Document 6.2 Chapter 2 Legislation and Policy Context** lists relevant regional and local policy documents.

15.2.24 A range of regional and local planning policies are in place that seek to protect and enhance air quality; these have been given due regard in the air quality assessment and have been considered as part of the design development process of the Project. Full details of local policies relevant to this assessment are presented in **Application Document 6.15.A1 Appendix 15.1 Regional and Local Planning Policy**.

15.3 Scoping Opinion and Consultation

Scoping Opinion

15.3.1 A Scoping Report for the Project was issued to the Planning Inspectorate on 21 August 2023 (**Application Document 6.5.A1 Appendix 5.1 EIA Scoping Report**) and a Scoping Opinion was received from the Planning Inspectorate on behalf of the SoS for the Department for Energy Security and Net Zero on 29 September 2023 (**Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**). Table 15.5 sets out the comments raised in **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** that relate to air quality and how these have been addressed in this assessment. **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** takes account of responses from prescribed consultees as appropriate. **Application Document 6.5.A3 Appendix 5.3 Scoping Response Tables** provide responses to

the comments made by the prescribed consultees at the scoping stage that relate to the scope of the assessment and how each comment has been considered.

Table 15.5 – Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
3.9.1	**Increase in local air pollutant concentrations due to emissions from Non-Road Mobile Machinery (NRMM) – Construction** The Applicant proposes to scope out this matter for the phase identified on the basis that significant effects are not likely, due to the temporary and transient nature of activities and incorporation of best practice measures (Communities of Common Practice (CoCP)) and compliance with NRMM standards. However, this will be confirmed following review of updated information in the air quality assessment. The Inspectorate is content that this matter can be scoped out subject to confirmation of the type, nature and duration of plant and machinery to be used in the construction phase and the range of measures to minimise effects on air quality, to be secured through the relevant control documentation.	Non-Road Mobile Machinery emissions during construction of the Project have been scoped out of detailed assessment and have instead been assessed qualitatively based on the type, nature and duration of plant and machinery to be used in the construction phase and the range of measures proposed to manage effects on air quality.
3.9.2	**Dust deposition and health impacts from elevated PM_{10} concentrations due to dust generating activities on nearby air quality sensitive receptors – Operation (maintenance activity)** The Applicant proposes to scope out this matter for the phase identified on the basis that significant effects are not likely, due to the infrequent, temporary and transient nature of activity and the incorporation of best practice measures (CoCP). The Inspectorate draws the Applicant's attention to ID 2.1.11 of this Scoping Opinion. The Inspectorate is content to scope out the specific maintenance activities that are planned to occur during the operational phase in relation to the receptors identified on the basis of the proposed low-level activity and subject to the incorporation of best practice measures (CoCP).	Assessment of operational and maintenance air quality impacts remain scoped out of the ES. Best practice measures to mitigate air quality impacts during maintenance activities in the operational phase would be implemented in accordance with measures AQ14 of **Application Document 7.3 Register of Environmental Actions and Commitments**.
3.9.3	**Increase in local air pollutant concentrations and nitrogen deposition**	As agreed through the Scoping Opinion (**Application Document**

ID	Inspectorate's comments	Response
	rates on nearby air quality sensitive receptors as a result of vehicle emissions – Operation (maintenance activity) The Applicant proposes to scope out this matter for the phase identified on the basis that significant effects are not likely, as vehicle trips associated with the operation and maintenance phases are anticipated to be below the Institute of Air Quality Management (IAQM) screening criteria and therefore impacts are considered to be not significant. However, this will be confirmed following review of updated information in the air quality assessment. The Inspectorate draws the Applicant's attention to ID 2.1.11 of this Scoping Opinion. The Inspectorate is content to scope out the specific maintenance activities that are planned to occur during the operational phase in relation to the receptors identified on the basis of the low-level activity proposed and subject to the updated information in the air quality assessment confirming that significant effects would not be likely.	**6.5.A2 Appendix 5.2 Scoping Opinion)** the assessment of traffic impacts during the operation of the Project and maintenance activities has been scoped out of the assessment presented in **Application Document 6.14 Chapter 14 Traffic and Transport** owing to the low levels of generated traffic movements during these stages of the Project's lifecycle. It therefore follows that traffic flows associated with operational and maintenance activities during the operational phase will remain below the IAQM screening criteria, and therefore have been scoped out of detailed assessment as significant effects would not be likely.
3.9.4	**Increase in local air pollutant concentrations due to emissions from NRMM on nearby air quality sensitive receptors - Operation (maintenance activity)** The Applicant proposes to scope out this matter for the phase identified on the basis that significant effects are not likely, due to the infrequent, temporary and transient nature of activity during the phase and the incorporation of best practice measures (CoCP) and compliance with NRMM standards. The Inspectorate draws the Applicant's attention to ID 2.1.11 of this Scoping Opinion. The Inspectorate is content to scope out the specific maintenance activities that are planned to occur during the operational phase in relation to the receptors identified on the basis of the low-level activity proposed and subject to the incorporation of best practice measures (CoCP) and compliance with NRMM standards.	Assessment of operational and maintenance air quality impacts remain scoped out of the ES. Best practice measures to mitigate air quality impacts during the operation and maintenance phase would be implemented in accordance with measure AQ14 of **Application Document 7.3 Register of Environmental Actions and Commitments**.

ID	Inspectorate's comments	Response
3.9.5	**NRMM** The Inspectorate advises that the power of NRMM, where required, should meet or not exceed the latest emissions standards set out in Regulation (EU) 2016/1628 (as amended).	Noted. A commitment to the use of Stage IV NRMM as a minimum and Stage V where possible on the Project is set out in commitment AQ11 of **Application Document 7.3 Register of Environmental Actions and Commitments**. The NRMM to be used by the Project will therefore meet or exceed the latest emissions standards.

Statutory Consultation

15.3.2 Statutory consultation for the Project took place between 18 February and 15 April 2025. A summary of the relevant feedback received during statutory consultation relating to air quality is provided below in Table 15.6. Further details on how consultation responses have informed the assessment are provided in **Application Document 5.1 Consultation Report**.

Table 15.6 – Assessment aspects raised at statutory consultation and how these have been addressed

Stakeholder	Assessment aspects raised	How this has been addressed
Natural England	Natural England welcomes the implementation of a 200 m threshold from all construction compounds for consideration of impacts from stationary plant emissions.	There are no designated ecological sites within 200 m of construction compounds. Following further stakeholder engagement, the study area for designated ecological sites has been expanded to 500 m for construction compounds.
Natural England	Natural England welcomes the thresholds set out for consideration of impacts from construction traffic emissions. Natural England considers the thresholds proposed to be suitably precautionary to screen the need for further assessment. Where the thresholds are exceeded, further assessment will be required within the ES.	Cumulative construction traffic flows have been screened against the Design Manual for Roads and Bridges (DMRB) LA 105 criteria for ecological receptors (National Highways, 2024) above which assessment of construction vehicle emissions may be required. Exceedances of the screening criteria have been identified and the Affected Road Network (ARN)[1] defined. There are no Special Areas of Conservation (SACs), possible SACs, Special Protection Areas (SPAs),

[1] The Affected Road Network (ARN) describes the construction traffic routes where the screening criteria for detailed assessment of construction vehicle emissions are exceeded. As the screening criteria for human and ecological receptors differ, the ARNs described for human and ecological receptors also differ.

Stakeholder	Assessment aspects raised	How this has been addressed
		potential SPAs, Ramsar Sites, or Sites of Special Scientific Interest (SSSIs), within 200 m of the ARN. Therefore in accordance with Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects (NSIPs) [2] further detailed assessment of vehicle emissions on statutorily designated ecological sites has not been undertaken. However, a desk study for other designated and non-designated ecological sites within 200 m of the ARN revealed five non-statutorily designated ecological sites (Local Wildlife Sites (LWS)) and one non-designated Wildlife Trust Reserve to be present. Although these sites are not covered by Natural England's statutory screening criteria, they have been assessed as a precautionary measure, as outlined in section 15.9.
Natural England	Natural England notes that a 50 m threshold has been used for ecological receptors for dust as detailed in the referenced IAQM guidance. Despite this, Natural England always advise a 200 m threshold is used for dust emissions to nationally and internationally designated sites which have potentially sensitive receptors. This is due to the large potential dispersion distances of $PM_{2.5}$. We therefore advise that the ecological receptor threshold should be extended from 50 m to 200 m for these sites.	A study area extending 250 m from the Order Limits and 50 m from the construction traffic routes (comprising the Primary Access Routes (PARs) up to 250 m from the bellmouths) has been adopted for the construction dust assessment of ecological receptors. This is consistent with the study area applied to human receptors and is beyond the 200 m study area requested by Natural England.
Natural England	Natural England welcomes the dust mitigation measures proposed & consider where appropriately implemented in proximity to designated sites, impacts from dust could be ruled	A construction dust assessment has been undertaken and specific dust mitigation measures identified as presented in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology**

[2] Natural England's standard advice is not publicly available. It is however similar to that outlined in Air Pollution and Development: Advice for Local Authorities (Natural England, 2025), noting however that this particular advice is not for NSIPs.

Stakeholder	Assessment aspects raised	How this has been addressed
	out. The ES should be clear where dust measures are to be implemented in relation to designated sites.	**and Assessment**. Construction dust mitigation measures are also outlined in **Application Document 7.3 Register of Environmental Actions and Commitments**. A full list of the designated sites included in the construction dust study area are detailed in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**.

Stakeholder Engagement

15.3.3 National Grid Electricity Transmission plc (National Grid) has engaged with relevant stakeholders throughout the evolution of the Project including East Riding of Yorkshire Council, North Lincolnshire Council, Bassetlaw District Council, and Natural England. A summary of discussions and how these have influenced the scope and the approach to the air quality assessment are provided in Table 15.7.

Table 15.7 – Further engagement

Stakeholder and date	Key topic raised	How this has been addressed
East Riding of Yorkshire Council, email correspondence 25 June 2026	National Grid sought confirmation of the Council's agreement of the proposed methodology and modelled receptor locations for the construction vehicle emissions assessment; and requested that the Council provide their 2025 air quality monitoring data.	The 2025 monitoring data was provided by the Council and has been included in baseline. The Council agreed the methodology and approach, including receptor locations (see also **Application Document 5.8 Statements of Common Ground**). The agreed receptor locations have been modelled for construction vehicle emissions assessment.
North Lincolnshire Council, email correspondence 25 June 2026	National Grid sought confirmation of the Council's agreement of the proposed methodology and modelled receptor locations for construction vehicle emissions assessment; and requested that the Council provide their 2025 air quality monitoring data.	The 2025 monitoring data was provided by the Council and has been included in baseline. The Council agreed the methodology and approach, including receptor locations (see also **Application Document 5.8 Statements of Common Ground**). The agreed receptor locations have been modelled for construction vehicle emissions assessment.

Stakeholder and date	Key topic raised	How this has been addressed
Bassetlaw District Council, email correspondence 25 June 2026	National Grid sought confirmation of the Council's agreement of the proposed methodology and modelled receptor locations for construction vehicle emissions assessment; and requested that the Council provide their 2024 and 2025 air quality monitoring data.	To date, no response has been received from the Council. The monitoring data from 2023, available from the Council website, has been annually adjusted for use in the construction vehicle emissions assessment in the absence of any more recent data from the Council. The proposed receptor locations have been modelled for construction vehicle emissions assessment.
Natural England, email correspondence 3 July 2026	Natural England provided their Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects (NSIPs). Natural England noted that they will only provide bespoke advice on air quality to a project if there are exceptional circumstances and/or novel technologies are proposed.	Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects (NSIPs) has been followed throughout the air quality assessment for designated ecological sites.

Summary of Scope of Assessment

15.3.4 The following summarises which aspects have been scoped into and out of the assessment through **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** and **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** as set out in Table 15.5 and statutory consultation as set out in Table 15.6, and further engagement with stakeholders as set out in Table 15.7.

Aspects scoped into the assessment

15.3.5 The following aspects of air quality have been scoped into the assessment:

- Construction dust emissions;
- Construction vehicle emissions; and
- Emissions from NRMM, including temporary generators, during construction.

Aspects scoped out of the assessment

15.3.6 The following aspects of air quality have been scoped out of the assessment, as confirmed in **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**:

- Operational generator emissions;
- Operational and maintenance vehicle emissions; and

- Decommissioning has been scoped out of the assessment as explained in **Application Document 6.5 Chapter 5 EIA Approach and Methodology**.

15.4 Assessment Approach and Methods

15.4.1 **Application Document 6.5 Chapter 5 EIA Approach and Methodology** sets out the overarching approach which has been used in preparing the information in this ES. This section describes the technical methods used to determine the baseline conditions, sensitivity of receptors, and magnitude of impacts, and sets out the criteria that have been used for the air quality assessment. Where the assessment criteria terminology differs from the general assessment criteria terminology, as set out in **Application Document 6.5 Chapter 5 EIA Approach and Methodology**, justification is provided.

Guidance Specific to the Air Quality Assessment

15.4.2 Relevant guidance, specific to air quality, that has informed the approach to the air quality assessment comprises:

- Institute of Air Quality Management: Guidance on the Assessment of Dust from Demolition and Construction (Institute of Air Quality Management, 2024) (Version 2.2)[3] (hereafter referred to as IAQM Construction Dust guidance). This guidance was updated in January 2024, and the construction dust study area and assessment methodology have been updated accordingly since authoring the EIA Scoping Report (**Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report**).
- Institute of Air Quality Management and Environmental Protection UK (EPUK) Land-Use Planning and Development Control: Planning for Air Quality guidance[4] (Institute of Air Quality Management and Environmental Protection UK, 2017) (hereafter referred to as IAQM and EPUK Development Control guidance).
- Institute of Air Quality Management: A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Institute of Air Quality Management, 2020) (hereafter referred to as IAQM Ecological guidance).
- Department for Environment, Food and Rural Affairs Local Air Quality Management Technical Guidance (TG22) (hereafter referred to as LAQM.TG(22)) (Department of Food & Rural Affairs , 2025).
- National Highways Design Manual for Roads and Bridges (DMRB) LA 105 Air Quality (National Highways, 2024).
- Natural England: Standard Advice for Air Quality Impacts in National Significant Infrastructure Projects (NSIPs).

[3] At the time of writing the IAQM Construction Dust guidance remains current but is undergoing consultation and revision. The release date for the updated guidance has not been confirmed and a consultation draft has not been released.

[4] At the time of writing the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) remains current but is undergoing review and revision. The release date for the updated guidance has not been confirmed and a consultation draft has not been released.

Study Area

Construction dust

15.4.3 Following Natural England's feedback raised at statutory consultation regarding the study area being smaller for ecological receptors than for human receptors (Table 15.6), the study area for ecological receptors has been amended so that it is now the same as for human receptors. The study area for construction phase dust, based on the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024), in addition to Natural England feedback, is therefore as follows:

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

15.4.4 The construction dust study area is presented in **Application Document 6.15.F1 Figure 15.1 Air Quality Construction Dust Study Area**. Further details regarding the construction dust buffers are available in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**.

Construction vehicle emissions

15.4.5 The study area for assessment of construction vehicle emissions is an area within 200 m of the ARN, which is determined by the screening of traffic data for the construction traffic routes. As such the study area can extend far from the Order Limits along the road network. As different screening criteria are applied to human and ecological receptors, different ARN are defined for each.

15.4.6 The ARN for human receptors is defined where the development traffic flows on roads exceed the IAQM and EPUK Development Control guidance screening criteria (Institute of Air Quality Management and Environmental Protection UK, 2017).

15.4.7 The ARN for ecological receptors is defined where cumulative traffic flows on roads exceed the National Highways DMRB LA 105 traffic screening criteria (National Highways, 2024).

15.4.8 The relevant screening criteria are presented in the 'Assessment Methods and Criteria' section below, under the 'Construction Vehicle Emissions Assessment' heading. The study area for the assessment of construction vehicle emissions is presented in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**, displaying the construction traffic routes and ARNs.

Construction plant and equipment emissions

15.4.9 No specific guidance exists on the definition for a study area for NRMM point sources due to the large variation in the extent of potential impacts from different types of sources. Whilst NRMM could be used anywhere within the Order Limits, it has been assumed that the majority of stationary plant equipment, such as temporary generators, would be used within the construction compounds. For the purposes of this assessment, identification of any human receptors within 200 m of the construction compounds is considered appropriate given the size and temporary nature of the operations, based on professional judgement. Beyond this distance, it is judged that the effect of any emissions on local air quality would have no potential to be significant.

15.4.10 Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects states a screening criterion of 500 m for general combustion processes (under 20 MW energy input), applicable for designated ecological sites. In the absence of equivalent guidance for non-statutorily designated ecological sites, a study area of 200 m is considered proportionate and appropriate, based on professional judgement and the temporary nature of the proposed construction activities.

15.4.11 The study area for NRMM emissions therefore comprises human receptors and non-statutorily designated ecological sites within 200 m of the construction compounds, and designated ecological sites within 500 m of the construction compounds, as shown in **Application Document 6.15.F3 Figure 15.3 Air Quality NRMM Emissions Study Area**.

Baseline Data Gathering and Forecasting Methods

Data sources

15.4.12 The baseline information presented in this chapter has been informed by a desk study which has drawn on the following information sources:

- Department for Environment, Food and Rural Affairs UK Air Information Resource (UK AIR) website (Department of Food & Rural Affairs , 2026) – to establish predicted background concentrations for NO_2, PM_{10} and $PM_{2.5}$ and determine existing AQMAs;
- Local authority websites and Air Quality Annual Status Reports (ASRs) – to identify existing AQMAs and local air quality monitoring results:
  - East Riding of Yorkshire Council 2025 Air Quality ASR (East Riding of Yorkshire Council, 2025);
  - North Lincolnshire Council 2025 Air Quality ASR (North Lincolnshire Council, 2025); and
  - Bassetlaw District Council 2024 Air Quality ASR (Bassetlaw District Council, 2024).
- Ordnance Survey (OS) 1:10,000, 1:25,000, 1:50,000 and 1:250,000 scale base mapping;
- Ordnance Survey AddressBase Plus data;
- Multi-Agency Geographic Information for the Countryside (MAGIC) website (Department of Food & Rural Affairs , 2026) – to identify ecological sites within the air quality study areas; and
- Air Pollution Information Service (APIS) (UK Centre for Ecology & Hydrology, 2026) – to identify any habitats or features of designated sites that are sensitive to nutrient nitrogen and acid deposition.

Site visits and surveys

15.4.13 No air quality site visits or monitoring surveys have been undertaken for this assessment due to the availability of sufficient local authority air quality monitoring data.

Assessment Methods and Criteria

Construction dust assessment

15.4.14 The construction dust assessment has been undertaken following the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024), which is further detailed in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**.

Sensitivity of air quality receptors

15.4.15 The sensitivity of the area to dust impacts has been defined as low, medium or high sensitivity, in accordance with IAQM Construction Dust guidance (Institute of Air Quality Management, 2024).

15.4.16 The factors influencing the definition of receptor sensitivity to dust impacts are as follows:

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

15.4.17 Section 4.5 of the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024) defines a 'human receptor' as follows:

'*A 'human receptor', refers to any location where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM* [particulate matter] *over a time period relevant to the air quality objectives, as defined in the Government's technical guidance for Local Air Quality Management. In terms of annoyance effects, this will most commonly relate to dwellings, but may also refer to other premises such as buildings housing cultural heritage collections (e.g. museums and galleries), vehicle showrooms, food manufacturers, electronics manufacturers, amenity areas and horticultural operations (e.g. salad or soft-fruit production)*.'

15.4.18 Section 4.5 of the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024) also defines 'ecological receptors':

'*An 'ecological receptor' refers to any sensitive habitat affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats)*.'

Magnitude of dust effects

15.4.19 The scale and nature of the works determines the magnitude of dust emissions arising as small, medium or large. The following criteria, as defined in section 7.2 of

the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024), have been applied to define the potential magnitude of dust emissions:

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

Significance of effects

15.4.20 The IAQM Construction Dust guidance (Institute of Air Quality Management, 2024) categorises the unmitigated risk of dust impacts on human health and amenity (rather than ascribe a significance of effect) as a means of identifying the level of dust emissions mitigation required to ensure that residual effects are 'not significant'. The risk of dust impact categories applied in this assessment are presented in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**. A higher dust risk rating requires more stringent mitigation measures in order to limit residual effects.

Construction vehicle emissions assessment

15.4.21 The assessment of construction vehicle emissions impacts on human receptors is based upon the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) which sets out screening criteria (thresholds) above which assessment may be required. These were used as the basis for describing the study area for assessment of construction vehicle emissions, as detailed above. The IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) provides thresholds for the daily flows of both Light Duty Vehicles (LDVs) and HDVs, which vary depending on whether an AQMA is present or not. Light Duty Vehicles are defined as cars and small vans less than 3.5 tonne gross vehicle weight and HDVs are defined as heavy commercial road vehicles greater than 3.5 tonne gross vehicle weight, including passenger transport[5]. The IAQM and EPUK Development Control screening criteria determines that a detailed assessment is required when the following occurs as a result of the Project:

[5] It is noted that **Application Document 6.14 Chapter 14 Traffic and Transport** discussed Heavy Goods Vehicles (HGV), this term focuses specifically on commercial trucks and lorries that transport physical goods and freight, whereas HDV is a broader term, commonly used in emissions reporting, which includes HGVs, but also passenger transport (e.g. busses and coaches), and specialised municipal work vehicles.

- A change in LDV flows of greater than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA, or greater than 500 AADT elsewhere;
- A change in HDV flows of greater than 25 AADT within or adjacent to an AQMA, or greater than 100 AADT elsewhere;
- Where a road is realigned by 5 m or more and is within an AQMA; and
- Where a junction is added or removed close to existing receptors.

15.4.22 The study area for the assessment of construction vehicle emissions on ecological receptors is an area within 200 m of the construction traffic routes which exceed the National Highways DMRB LA 105 traffic screening criteria (National Highways, 2024). The DMRB LA 105 screening criteria are as follows:

- A change in AADT flows of more than 1,000 AADT;
- A change in HDV flows of more than 200 AADT;
- A change in speed band; and
- Where a carriageway alignment is changed by more than 5 m.

15.4.23 Roads which meet the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) and/or National Highways DMRB LA 105 (National Highways, 2024) screening criteria are referred to as the ARN and are presented in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**.

15.4.24 For the assessment of designated ecological sites, the criteria are considered in combination with other relevant plans and projects to determine whether further assessment is required. Therefore, the study area is based on the change in combined traffic from the Project and from other projects and plans (such as committed developments) in accordance with the requirements of Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects (NSIPs) and IAQM Ecological guidance (Institute of Air Quality Management, 2020).

15.4.25 The following traffic data scenarios are modelled in order to calculate the magnitude of change:

- Base Year (2024) – existing year for model verification using monitoring data;
- Do Minimum (2029) – peak construction traffic year without Project construction traffic flows but with cumulative traffic flows from other committed developments; and
- Do Something (2029) – peak construction traffic year with Project construction traffic flows and cumulative traffic flows from other committed developments.

15.4.26 The traffic data for each scenario are input into Defra's Emissions Factors Toolkit (EFT) v14.1 (Department of Food & Rural Affairs , 2026). Construction HDVs have been modelled as Euro VI in line with commitment AQ13 of **Application Document 7.3 Register of Environmental Actions and Commitments** which states that all construction phase HDVs must meet the Euro VI emissions standard. It should be noted that Defra released EFT v14.2 (Department of Food & Rural Affairs , 2026) shortly before publication of the ES; v14.2 made minor process refinements, but there have been no changes to the emission factors, vehicle fleet or the methodology. As such, the update does not affect the assessment outcome.

15.4.27 The local authority monitoring data across the modelled road network are used for model verification to ensure the dispersion modelling predicts pollution concentrations reasonably across the study area, in accordance with LAQM.TG(22) (Department of Food & Rural Affairs , 2025). Where the modelling under/over predicts pollutant concentrations, an adjustment factor is derived which is then applied to the future modelling predictions to correct for any systematic bias. Further details on the model inputs and verification process are provided in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

Sensitivity of air quality receptors

15.4.28 Where screening of the relevant data indicates that any of the aforementioned criteria are met (paragraphs 15.4.21 and 15.4.22), then potential impacts of vehicle emissions at sensitive receptor locations are assessed by calculating the change in pollutant concentrations (NO_2, PM_{10} and $PM_{2.5}$) as a result of the Project. Representative worst-case receptor locations have been selected within 200 m of the ARN for human receptors, i.e. located where the largest changes in pollutant concentrations are expected. These locations are presented in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**.

15.4.29 The LAQM.TG(22) (Department of Food & Rural Affairs , 2025) defines a sensitive receptor as a location representative of human exposure to a pollutant, over a time period relevant to the objective that is being assessed against, where the AQS objectives are considered to apply, as detailed in Table 15.8.

Table 15.8 – Examples of where the AQS objectives apply

Averaging period	Objectives should apply at	Objectives should not apply at
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term.
24-hour mean	All locations where the annual mean objective would apply, together with hotels and gardens of residential properties.	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term.
1-hour mean	All locations where the annual mean and 24-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc.	Kerbside sites where the public would not be expected to have regular access.

Averaging period	Objectives should apply at	Objectives should not apply at
	which are not fully enclosed, where members of the public would reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer.	

15.4.30 All air quality receptors are treated equally, with sensitivity being identified as locations representative of exposure to the averaging periods of relevant AQALs. A total of 40 human receptor locations (38 residential properties and two schools) were selected for dispersion modelling and are presented in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations** and detailed in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

15.4.31 Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects (NSIPs) defines protected ecological sites as those sites protected under the Conservation of Habitats and Species Regulations 2017 (HM Government, 2017) (SACs, possible SACs, SPAs, Potential SPAs, and Ramsar sites), and the Wildlife and Countryside Act 1981 (HM Government, 1981) (SSSIs). A desk study showed there are no SACs, possible SACs, SPAs, Potential SPAs, Ramsar sites, or SSSIs within 200 m of the defined ARN. Therefore, further detailed assessment of construction vehicle emissions relating to protected ecological sites has been screened out as impacts would be negligible in accordance with Natural England's Standard Advice and DMRB LA 105 (National Highways, 2024).

15.4.32 A desk study for other (non-protected) ecological sites within 200 m of the defined ARN was undertaken. Five non-statutorily designated ecological sites (LWSs) and one non-designated Wildlife Trust Reserve were identified, and so have been assessed in accordance with IAQM Ecological guidance (Institute of Air Quality Management, 2020) and DMRB LA 105 (National Highways, 2024). A modelled ecological receptor location was selected for each of these identified ecological sites at the closest point to the roadside of the ARN (i.e. worst-case location) as presented in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations** and detailed in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**. The ecological sites modelled for the air quality assessment are:

- Bridgehead Yorkshire Wildlife Trust Reserve (YWTR);
- Woodhill Path, Cottingham (LWS);
- Drove Road LWS;
- Jillywood Lane LWS;
- Dunswell Adits Candidate LWS; and
- Figham Pastures LWS.

15.4.33 In accordance with the IAQM Ecological guidance (Institute of Air Quality Management, 2020), non-statutory sites such as those identified above are classed as medium sensitivity receptors where there is ecological value and some sensitivity to air pollution.

Magnitude of vehicle emission effects

15.4.34 Detailed dispersion modelling is undertaken using Atmospheric Dispersion Modelling Software (ADMS) to predict pollutant concentrations at worst-case receptor locations within the study area. The magnitude of change is calculated (i.e. the difference between Do Minimum and Do Something scenarios as described in paragraph 15.4.25), and total concentrations compared against the relevant AQAL (as set out previously in Table 15.1 and Table 15.2) in accordance with the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017).

15.4.35 As the six ecological sites identified within 200 m of the ARN (paragraph 15.4.31) are not subject to protection under either the Conservation of Habitats and Species Regulations 2017 (HM Government, 2017) or the Wildlife and Countryside Act (HM Government, 1981) the assessment considers the effects of the Project in isolation only as there is no requirement to undertake a separate in-combination assessment for these sites.

15.4.36 Further details regarding the detailed modelling undertaken for this assessment are presented in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

Significance of effects

15.4.37 The significance of vehicle emission effects for human receptors is determined in accordance with the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) and is dependent upon the percentage change in the predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations between the 'without Project' and 'with Project' scenarios, relative to the relevant AQALs, as presented in Table 15.9.

Table 15.9 – IAQM impact descriptors for individual receptors

Long-term average concentration at receptor in assessment year	**Percentage change in concentration relative to air quality assessment level (AQAL)**			
	1	**2-5**	**6-10**	**Greater than 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

15.4.38 The IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017) notes that the impact descriptors in Table 15.9 are for individual receptors only, and the overall significance of effect should be determined using professional judgement, taking into account the degree of impact (based on the difference between Do Minimum and Do Something scenarios) and factors such as:

- The existing and future air quality in the absence of the development;
- The extent of current and future populations' exposure to the impact; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

15.4.39 The significance of vehicle emission effects for ecological receptors is determined in accordance with the IAQM Ecological guidance (Institute of Air Quality Management, 2020) which states that an increment of 1% (or less) of the relevant long term critical level is considered inconsequential. The 1% threshold has become widely used throughout the air quality assessment profession to define a reasonable quantum of long-term pollution which is not likely to be discernible from natural fluctuations in background measurements. It should be noted that the 1% threshold does not, of itself, imply damage to a habitat therefore if an exceedance of this threshold is identified it should be passed to the ecologist to use their expertise to determine whether or not there is a likely significant effect of the Project on the habitat.

Construction plant and equipment emissions

15.4.40 As noted within the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024), exhaust emissions arising from NRMM are generally not considered likely to give rise to significant effects for the purposes of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (HM Government, 2017), based on established assessment experience. This position is reiterated in Defra's LAQM.TG(22) guidance (Department of Food & Rural Affairs , 2025), which acknowledges that NRMM exhaust emissions, when subject to appropriate controls and effective site management, are unlikely to have a significant influence on local air quality.

15.4.41 Accordingly, a range of mitigation measures targeting NRMM emissions have been incorporated into **Application Document 7.3 Register of Environmental Actions and Commitments** and **Application Document 7.2 Outline Code of Construction Practice**. Delivery of a detailed Code of Construction Practice prior to construction (to be substantially based on the outline document) is secured through Requirement 4 of **Application Document 3.1 Draft Development Consent Order**. These measures are designed to reduce emissions and limit potential air quality effects during the construction phase.

15.4.42 Notwithstanding the above, a qualitative assessment of NRMM emissions has been carried out to evaluate potential effects on sensitive human and ecological receptors. This assessment follows the methodology set out in LAQM.TG(22) (Department of Food & Rural Affairs , 2025). The adoption of a qualitative approach is endorsed by both the IAQM and Defra methods and is considered appropriate for screening the significance of NRMM-related impacts.

15.4.43 The qualitative assessment has evaluated the potential for significant effects on sensitive human and ecological receptors, taking into account the following considerations:

- The anticipated duration and phasing of construction activities (where information is available);
- The expected types of NRMM to be deployed, including their applicable emissions standards;
- The power output ratings of the NRMM fleet;
- Comparison of NRMM vs HDV emissions;
- The proximity of sensitive receptors to areas of NRMM operation; and
- Baseline air quality conditions within the study area (e.g., Defra mapped background pollutant concentrations).

Sensitivity of air quality receptors

15.4.44 As stated previously, all air quality receptors are treated equally, with sensitivity being identified as locations representative of exposure to the averaging periods of relevant AQALs. The LAQM.TG(22) (Department of Food & Rural Affairs , 2025) defines a sensitive receptor as a location representative of human exposure to a pollutant, over a time period relevant to the objective that is being assessed against, where the AQS objectives are considered to apply, as detailed in Table 15.8.

15.4.45 In accordance with Natural England's Standard Advice for Air Quality Impacts in Nationally Significant Infrastructure Projects, the requirement for detailed assessment is if designated sites are identified within 500 m of the construction compounds. Therefore, the aforementioned qualitative approach for NRMM emissions is considered appropriate for this assessment.

15.4.46 The study area for construction plant and equipment emissions is displayed in **Application Document 6.15.F3 Figure 15.3 Air Quality NRMM Emissions Study Area**.

Significance of effects

15.4.47 As no designated ecological sites are present within 500 m of the construction compounds and there are no human or non-statutorily designated ecological sites within 200 m, a detailed assessment is not required and a qualitative assessment has been undertaken. This approach is consistent with LAQM.TG(22) (Department of Food & Rural Affairs , 2025) which states that qualitative consideration of NRMM will likely provide sufficient screening and experience suggests NRMM are unlikely to give rise to significant effects on local air quality where appropriate control measures and site management practices are implemented. Such measures are secured through the **Application Document 7.2 Outline Code of Construction Practice** and **Application Document 7.3 Register of Environmental Actions and Commitments**. On this basis, significant effects from construction plant and equipment emissions are not anticipated.

Assumptions and Limitations

15.4.48 The assessment has been undertaken based on design information for the Project as described in **Application Document 6.4 Chapter 4 Description of the Project**.

- It is assumed that all construction activities other than construction traffic using public roads would take place within the Order Limits.
- Dust generating activities have been assumed to occur anywhere within the Order Limits. This is a worst-case assumption included to cover all potential effects.
- It is assumed that reinforced concrete would be the primary material used for the pylon foundations, but that no on-site concrete batching would be required.
- Construction traffic data assumptions are provided in **Application Document 6.14 Chapter 14 Traffic and Transport**.
- It is assumed for the purpose of the assessment that NRMM would be used throughout the Order Limits; however, the majority of NRMM would be used at the construction compounds.
- It is assumed that all data provided by third parties is accurate.
- The Department for Environment, Food and Rural Affairs released EFT v14.2 (Department of Food & Rural Affairs , 2026) shortly before publication of the ES. Although the assessment was undertaken using the previous version, EFT v14.2 introduced only minor process refinements and did not include changes to emission factors, vehicle fleet data or assessment methodology. The use of EFT v14.2 would therefore not materially alter the assessment results or conclusions.
- Since completion of the assessment, Natural England has published the Screening Tool for Air Quality Impacts from Roads (STAIR) to support the screening of road traffic-related air quality impacts on designated ecological sites. Owing to the timing of its release in relation to finalisation of the DCO application, it has not been possible to review the assessment against the tool prior to submission. The assessment presented in this chapter has therefore been undertaken using the guidance, datasets and assessment methodologies available at the time of assessment.

15.5 Basis of Assessment

15.5.1 This section sets out the assumptions that have been applied in respect of design flexibility maintained within the Project.

15.5.2 Details of the available flexibility and assessment scenarios are presented in **Application Document 6.5 Chapter 5 EIA Approach and Methodology**.

Flexibility Assumptions

15.5.3 The air quality assessment has been undertaken based on the description of the Project provided in **Application Document 6.4 Chapter 4 Description of the Project**. To take account of the flexibility allowed in the Project, consideration has been given to the potential for effects to be of greater or different significance, should any of the permanent or temporary infrastructure elements be moved within the Limits of Deviation (LoD) (horizontal, vertical or longitudinal) or Order Limits.

15.5.4 The assumptions made regarding the use of flexibility for the assessment are set out in Table 15.10.

Table 15.10 – Flexibility assumptions

Element of flexibility	How this has been considered within the assessment
Horizontal LoD	To allow for flexibility of the horizontal movement, the construction dust assessment and NRMM emissions assessment has assumed activities could take place anywhere within the Order Limits. As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport,** any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. Therefore, any horizontal movement within the LoD would not affect the outcome of the assessment.
Vertical LoD	As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. The primary material for the pylon construction is galvanised steel which is not considered to be a dust generating material. Therefore, any vertical changes would not affect the outcome of the construction dust assessment, construction vehicle emissions, or NRMM emissions.
Longitudinal LoD	As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. The construction dust assessment and NRMM emissions assessment have assumed activities could take place anywhere within the Order Limits. Therefore, any longitudinal change within the LoD would not affect the outcome of the assessment.
Pylon footprint	As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. The construction dust assessment and NRMM emissions assessment have assumed activities could take place anywhere within the Order Limits. Therefore, any change to pylon footprint within the LoD would not affect the outcome of the assessment.
Foundation type	As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. Concrete is considered to be a potentially dust generating construction material. Therefore, to represent a worst case, the construction dust

Element of flexibility	How this has been considered within the assessment
	assessment has assumed that reinforced concrete would be the primary material used for the foundations, but that no on-site concrete batching would be required. As the worst-case has been considered, changes to the foundation type, such as use of piling, would not affect the outcome of the construction dust assessment, vehicle emissions, or NRMM emissions.
Order Limits – temporary construction works	For the construction dust assessment, it has been assumed that construction activities could be undertaken up to the Order Limits, as a reasonable worst-case in accordance with the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024). As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, any variations in pylon design/location and foundation type (and therefore materials deliveries) are more than accommodated for within the contingency which is included in the traffic figures. It is assumed for the purpose of the assessment that NRMM emissions within the Order Limits would be transient and that the majority of NRMM emissions would be from equipment used at the construction compounds.
Watercourse crossings	As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, the contingency that has been added to the traffic figures would allow for any unforeseen movements and site constraints relating to watercourse crossing (bridge/culverts) scenarios. Changes to watercourse crossings would not affect the outcome of the construction dust assessment, vehicle emissions, or NRMM emissions.
Modifications to third party assets – construction methodology	Allowance has been made within the Project design to modify/underground existing overhead third party assets that are crossed by the proposed overhead line. These modifications to third party assets would include placing the asset underground which could include the use of open cut trenching or trenchless techniques such as horizontal directional drilling to facilitate the crossing of roads or other existing infrastructure. As detailed in **Application Document 6.14 Chapter 14 Traffic and Transport**, the contingency added to traffic figures allows for variations in methodologies of the third parties. The construction dust assessment has identified the Project as high risk (the highest category) for dust mitigation measures, therefore air quality effects from any modifications to third party assets would be mitigated through existing measures, which are the most comprehensive measures available under the methodology, irrespective of the proposed construction method.

Optionality

15.5.5 As set out in Application Document 6.4 Chapter 4 Description of the Project and shown on Application Document 6.4.F3 Figure 4.3 Temporary Construction Works optionality has been included at the following five locations:

- Two alternative options for temporary construction access between Pennyhill Cottages (Main Street) Primary Access Route (PAR 34) and proposed pylon 4AF82 and satellite construction compound S-3:
  - Bellmouths BM-040/41, associated construction access track and watercourse crossings C-169 and BC-11; or
  - Bellmouths BM-040A/41A, associated construction access track and watercourse crossings C-220A, C-169A and BC-11A.
- Two alternative options for temporary construction access tracks to proposed pylon 4AF88:
  - Watercourse crossing BC-36 and BC-37; or
  - Watercourse crossing B-06A.
- Two alternative options for the construction access track between proposed pylons 4AF130 and 4AF131:A63
  - Watercourse crossing BC-29; or
  - Watercourse crossings BC-26A and BC-29B.
- Two alternative options for taking access off High Melwood (PAR 63) and the associated construction access track:
  - Bellmouth BM-078; or
  - Bellmouth BM-110.
- Two alternative power supply connections to the proposed main construction compound (M1) as shown on Application Document 6.4.F4 Figure 4.4 Third Party Works.
  - NPG-09A from the west – there is currently uncertainty whether capacity of the network would be sufficient for this this connection; or
  - NPG-09B from the east.

15.5.6 Where differences in effects between options have been identified, these are set out within section 15.9, with clear reference to the nature, extent, and significance of any resulting air quality effects.

Sensitivity Test

15.5.7 Under the terms of the DCO, construction could commence any year up to five years from the granting of the DCO, which is assumed to be 2028. Consideration has therefore been given to whether the effects reported would be different if the works were to commence in any year up to year five, following the granting of the DCO. Where there is a difference, this is reported in section 15.9 of this chapter.

15.5.8 The peak period of construction in terms of total annual forecast construction traffic movements is expected to occur in 2029 (based on works commencing in 2028). Whilst baseline traffic flows during a later assessment year (e.g. due to a delay in the Project) would be expected to be higher, the flows associated with the Project itself would not change. Additionally, air quality is expected to improve with time as technology improves, therefore further sensitivity testing has not been deemed necessary.

15.6 Baseline Conditions

15.6.1 This section describes the baseline air quality environment in the study area.

Existing Baseline

15.6.2 A review of the existing air quality baseline has been undertaken to establish an understanding of the baseline air quality environment, to identify areas that are likely to be sensitive to changes in emissions as a result of the Project, and to establish the likely type and nature of potential effects.

15.6.3 Air quality sensitive human and ecological receptors are present in and around the Order Limits. Settlements, villages and designated ecological sites are shown on **Application Document 6.15.F4 Figure 15.4 Air Quality Baseline**.

15.6.4 As required under Section 82 of Part IV of the Environment Act 1995 (HM Government, 1995) the local authorities covering the air quality study area(s) have undertaken a review and assessment of air quality within their area of jurisdiction (East Riding of Yorkshire, North Lincolnshire, and Bassetlaw) reported in ASRs. This process has identified one AQMA in Scunthorpe, declared by North Lincolnshire Council (North Lincolnshire Council, 2025).

15.6.5 The Scunthorpe AQMA has been declared for exceeding the 24-hour mean PM_{10} AQS objective. It was initially declared in 2005 and amended in 2018. The AQMA is an area encompassing the integrated steelworks site and a number of properties to the east of Scunthorpe (North Lincolnshire Council, 2025). Scunthorpe AQMA is located approximately 7 km east of the Order Limits, as shown on **Application Document 6.15.F4 Figure 15.4 Air Quality Baseline**.

15.6.6 There are no declared AQMAs within the East Riding of Yorkshire or Bassetlaw.

15.6.7 Both local authority air quality monitoring (diffusion tube) data and data from Defra's UK AIR website (Department of Food & Rural Affairs , 2026) has been used to inform the construction vehicle emissions modelling, as detailed in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

15.6.8 Local authority monitoring data derived from the ASRs for the most recently reported years do not show any exceedances of the annual mean NO_2, PM_{10} or $PM_{2.5}$ AQALs in East Riding of Yorkshire, North Lincolnshire, or Bassetlaw. The latest ASRs for East Riding of Yorkshire and North Lincolnshire were published in 2025, containing the 2024 monitoring data (North Lincolnshire Council, 2025) (East Riding of Yorkshire Council, 2025). However, unpublished 2025 monitoring data have been provided by North Lincolnshire Council and East Riding of Yorkshire Council for use in this assessment (see Table 15.7). For Bassetlaw, the 2025 ASR was not published at the time of writing, so the latest available data for 2023 was used, taken from the 2024 ASR (Bassetlaw District Council, 2024). Details of how the local authority monitoring data have been utilised for the assessment is presented in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**. The monitoring locations for East Riding of Yorkshire, North Lincolnshire, and Bassetlaw in closest proximity to the Order Limits are shown on **Application Document 6.15.F4 Figure 15.4 Air Quality Baseline**.

15.6.9 The annual mean NO_2 concentrations for the diffusion tube sites within 5 km the Order Limits are presented in Table 15.11. There are no automatic monitoring sites within 5 km of the Order Limits and therefore no particulate monitoring data have been utilised in the assessment. It should be noted that there are no North Lincolnshire diffusion tubes located within 5 km of the Order Limits, hence no North Lincolnshire monitoring sites are presented in Table 15.11 or on **Application Document 6.15.F4 Figure 15.4 Air Quality Baseline**.

Table 15.11 – Local authority air quality monitoring within 5 km of the Order Limits

Local authority	Site ID	OS reference (m)		Site type	Distance from Order Limits (km)	Annual mean NO_2 concentration ($\mu g/m^3$)			
		X	Y			2022	2023	2024	2025
ERYC*	S35	492244	431032	Roadside NO_2 diffusion tube	1.0	23.6	21.7	20.0	21.5
ERYC	S15	504100	433232	Roadside NO_2 diffusion tube	1.0	20.2	19.0	17.3	19.4
ERYC	S39	492243	431116	Roadside NO_2 diffusion tube	1.1	20.4	19.2	18.3	18.5
ERYC	S25	492328	431214	Roadside NO_2 diffusion tube	1.2	15.0	13.6	14.8	-
ERYC	S7	503013	438913	Kerbside NO_2 diffusion tube	2.3	20.0	19.6	18.9	19.1
ERYC	S5	503064	439001	Roadside NO_2 diffusion tube	2.4	20.9	21.3	21.5	20.6
ERYC	S6	503086	439020	Roadside NO_2 diffusion tube	2.4	22.5	21.4	20.2	23.1
BDC**	22	481341	374505	Roadside NO_2 diffusion tube	2.7	17.2	15.1	-	-
ERYC	S49	504063	439233	Roadside NO_2 diffusion tube	2.8	17.1	16.1	16.0	-
ERYC	S22	495626	427060	Roadside NO_2 diffusion tube	3.0	32.4	23.8	29.8	21.8
ERYC	S24	503754	439572	Roadside NO_2 diffusion tube	3.1	19.2	18.8	17.4	-
ERYC	S37	495732	426997	Roadside NO_2 diffusion tube	3.1	31.9	23.2	24.2	-
ERYC	S26	495723	426954	Roadside NO_2 diffusion tube	3.1	23.7	18.7	18.0	18.0
ERYC	S21	504697	439882	Roadside NO_2 diffusion tube	3.7	22.8	22.7	19.3	22.0
ERYC	S19	504637	440017	Roadside NO_2 diffusion tube	3.8	21.5	12.3	12.6	-
BDC	29	473811	371146	Roadside NO_2 diffusion tube	4.2	24.1	21.9	-	-
ERYC	S34	496771	426527	Roadside NO_2 diffusion tube	4.2	27.3	22.4	21.7	21.5

Local authority	Site ID	OS reference (m)		Site type	Distance from Order Limits (km)	Annual mean NO_2 concentration ($\mu g/m^3$)			
		X	Y			2022	2023	2024	2025
BDC	46	473900	370735	Roadside NO_2 diffusion tube	4.3	12.1	11.8	-	-
ERYC	S33	496872	426518	Roadside NO_2 diffusion tube	4.3	16.8	14.9	13.4	15.9
ERYC	S17	496997	426490	Roadside NO_2 diffusion tube	4.4	32.9	29.1	22.5	24.4
BDC	45	473600	371013	Urban Centre NO_2 diffusion tube	4.4	26.8	24.4	-	-
ERYC	S43	497222	426412	Roadside NO_2 diffusion tube	4.7	23.9	21.4	16.0	20.9
ERYC	S42	496860	425815	Roadside NO_2 diffusion tube	4.7	20.6	18.3	18.6	18.4
ERYC	S40	498492	426550	Roadside NO_2 diffusion tube	5.0	22.3	20.1	18.8	17.8
ERYC	S38	497423	426118	Roadside NO_2 diffusion tube	5.0	16.3	14.0	12.0	15.0

**ERYC – East Riding of Yorkshire Council*
***BDC – Bassetlaw District Council*

The ERYC site IDs shown are those reported in the 2024 ASR (East Riding of Yorkshire Council, 2025)*. ERYC renumbered diffusion tube monitoring locations in 2025 to maintain a continuous numbering sequence, and some 2025 IDs therefore differ from those shown in this table.*

15.6.10 Predictions of background pollutant concentrations are periodically produced by Defra to assist local authorities in their review and assessment of air quality. These are produced for every 1 km OS grid square in the UK. The Order Limits are located across a number of grid squares. Data for these grid squares were downloaded from Defra's UK AIR website (Department of Food & Rural Affairs , 2026) to provide baseline background concentrations to be combined with modelled vehicle emissions for the purposes of the assessment. Details of how Defra background data have been utilised for the assessment is presented in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling.** Table 15.12 summarises the range of background concentrations for the current year 2026 relating to the grid squares covering the Order Limits, and the relative AQAL values.

Table 15.12 – Background pollutant concentrations 2026*

Pollutant	Minimum concentration ($\mu g/m^3$)	Maximum concentration ($\mu g/m^3$)	Average concentration ($\mu g/m^3$)	Annual mean AQAL ($\mu g/m^3$)
NOx	6.1	8.3	6.6	30
NO_2	4.9	6.5	5.2	40
PM_{10}	11.2	15.8	13.2	40
$PM_{2.5}$	5.5	6.1	5.7	20

*Derived from (Department of Food & Rural Affairs , 2026).

15.6.11 Table 15.12 shows that 2026 background NOx, NO_2 and particulate matter concentrations in the vicinity of the Project are well below the relevant annual mean AQAL values.

Future Baseline

15.6.12 As detailed in **Application Document 6.5 Chapter 5 EIA Approach and Methodology**, a review has been undertaken to determine whether the existing baseline conditions might change between the time of undertaking the assessment and the future years when the Project is planned to be constructed and become operational.

15.6.13 A review of the identified future baseline developments was undertaken to determine whether they would introduce new sensitive human or ecological receptors relevant to the air quality assessment. No developments were identified within the defined air quality study areas that would result in future receptors requiring assessment.

15.6.14 Background pollutant concentrations are predicted to decrease in future years, as evidenced by trends observed from local authority monitoring data and future predicted Defra background map concentrations (Department of Food & Rural Affairs , 2026).

15.6.15 Traffic emissions are likely to contribute to baseline air quality concentrations in the vicinity of the Project. Whilst vehicle numbers are likely to increase, emissions (per vehicle) are predicted to decrease over time due to new technology, increasingly stringent emission regulations, and zero emission vehicles.

15.6.16 The construction and/or operation of future developments in the surrounding area may increase traffic flows in the vicinity of the Project, which could result in an increase in local air quality concentrations. In addition, construction of any consented developments may result in a temporary increase in particulate matter concentrations due to fugitive dust emissions from construction activities.

15.6.17 Predicted background data for the grid squares covering the Order Limits were downloaded from Defra's UK AIR website (Department of Food & Rural Affairs , 2026) for the Project's peak construction year 2029, to represent a worst-case for the future baseline. These are presented in Table 15.13 alongside the relative AQAL values.

Table 15.13 – Background pollutant predicted concentrations for 2029*

Pollutant	Minimum concentration ($\mu g/m^3$)	Maximum concentration ($\mu g/m^3$)	Average concentration ($\mu g/m^3$)	Annual mean AQAL ($\mu g/m^3$)
NOx	5.5	7.4	5.9	30
NO_2	4.4	5.9	4.8	40
PM_{10}	11.0	15.6	13.0	40
$PM_{2.5}$	5.3	6.0	5.6	20

*Derived from (Department of Food & Rural Affairs , 2026).

15.6.18 Table 15.13 shows that 2029 background NOx, NO_2 and particulate matter concentrations in the vicinity of the Project are well below the relevant annual mean AQAL value.

15.7 Potential Effects

15.7.1 Based on the assessment scope (see section 15.3), the following sections describe how construction (C), operation (O), and maintenance (M) activities are likely to affect air quality receptors in the study area. This takes account of the embedded mitigation measures which are defined in **Application Document 7.3 Register of Environmental Actions and Commitments**. This section first lists the impacts that could result from each phase of the Project and Table 15.14 sets out the impact pathways that have the potential to result in an effect on the receptors identified in section 15.6.

Construction

15.7.2 The impacts that could result from the construction of the Project are:

- Dust deposition;
- Human health impacts from dust;
- Dust impacts on ecological sites;
- Increased NO_2, PM_{10} and $PM_{2.5}$ concentrations at human receptors from construction vehicle emissions, NRMM, and temporary generator use; and

- Increased NOx concentrations at ecological receptors from construction vehicle emissions, NRMM, and temporary generator use.

Operation and Maintenance

15.7.3 Potential air quality effects from the operation and maintenance phases have been scoped out of assessment in accordance with the EIA Scoping Opinion as summarised in Table 15.5.

Summary of Potential Effects

15.7.4 Table 15.14 sets out the potential effects on the receptors identified in section 15.6 and during which phase of the Project.

Table 15.14 – Summary of potential air quality effects at each phase of the Project

Receptor	Potential effect	Description	C	O	M
Ecological sites within 250 m of Order Limits and within 50 m of the construction traffic routes up to 250 m from the bellmouths	Temporary dust deposition on ecological sites.	Temporary disturbance or degradation of habitats and displacement of species could occur as a result of dust generation and deposition.	✓	N/A	N/A
Residential properties within 250 m of Order Limits and within 50 m of the construction routes up to 250 m from the bellmouths	Temporary dust deposition and human health impacts on residents	Dust soiling and elevated particulate matter concentrations from dust generated during construction phase activities.	✓	N/A	N/A
Residential properties within 200 m of the ARN	Temporary increases in pollutant concentrations from vehicle emissions	Increases in NO_2, PM_{10} and $PM_{2.5}$ concentrations from construction vehicle exhaust emissions.	✓	N/A	N/A
Ecological sites within 200 m of the ARN	Temporary increases in NOx concentrations from vehicle emissions	Increases in NOx concentrations from construction vehicle exhaust emissions.	✓	N/A	N/A
Human receptors and non-statutorily designated ecological sites within 200 m of construction compounds and designated ecological sites within 500 m of construction compounds	Temporary increase in pollutant concentrations from NRMM and point source emissions	Increases in NO_2, PM_{10} and $PM_{2.5}$ concentrations from construction plant and equipment emissions including NRMM and temporary generators used during construction.	✓	N/A	N/A

15.8 Mitigation

Embedded Measures

15.8.1 Environmental appraisal has been an integral part of the Project design from the outset, which has meant that the Project has been able to avoid environmentally sensitive features as far as reasonably practicable. National Grid has also embedded measures into the design of the Project to avoid or reduce significant effects that may otherwise be experienced during construction and operation (and maintenance) of the Project.

15.8.2 Embedded measures are those that are intrinsic to and built into the design of the Project; these are presented in **Application Document 7.3 Register of Environmental Actions and Commitments** . Embedded measures of relevance to this air quality assessment are:

- DE1: The Project will be delivered and operated in compliance with all relevant legislation, consents and permits.
- DE11: The Project will be designed to comply with design safety standards including National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) and the suite of National Grid policies and processes which contain details on design standards required to be met when designing, constructing, and operating its projects.
- GG01: The final versions of the outline environmental management plans will be submitted for approval in accordance with Requirement 4 (construction management plans) of **Application Document 3.1 Draft Development Consent Order** prior to commencement of development and will reflect the final construction methodologies produced by the Main Works Contractor(s). The following will be produced prior to construction:
  - Code of Construction Practice (CoCP);
  - Construction Traffic Management Plan (CTMP);
  - Soil Management Plan;
  - Public Right of Way Management Plan;
  - Noise and Vibration Management Plan;
  - Landscape and Ecology Management Plan;
  - Archaeological Written Scheme of Investigation; and
  - Cultural Heritage Management Plan.
  - Framework Construction Surface Water Management Plan (CSWMP).
- All construction works will be undertaken in general accordance with these plans and all referenced subordinate plans.

15.8.3 Additionally, as set out in **Application Document 6.4 Chapter 4 Description of the Project**, the Project will aim to use local grid connections for temporary site power during construction, where viable. Where a local grid connection is not viable, sustainable options should be used, such as appropriately sized alternatively fuelled or hybrid generators, where practicable.

15.8.4 **Application Document 7.4 Outline Construction Traffic Management Plan** sets out measures to reduce journeys, such as car sharing and using public transport where practicable. It also sets out commitments regarding using electric vehicles or vehicles conforming with emission standards ratings.

Control and Management Measures

15.8.5 Control and management measures comprise management activities and techniques that will be implemented during construction of the Project to limit effects, through adherence to good site practices and ensuring legal compliance.

15.8.6 Measures relevant to the control and management of impacts during construction have been included within **Application Document 7.2 Outline Code of Construction Practice**, **Application Document 7.4 Outline Construction Traffic Management Plan** and **Application Document 7.5 Outline Soil Management Plan** which are secured by Requirement 4 of **Application Document 3.1 Draft Development Consent Order** and **Application Document 7.3 Register of Environmental Actions and Commitments** secured by Requirement 5 of **Application Document 3.1 Draft Development Consent Order**. These outline management plans and the following measures **in Application Document 7.3 Register of Environmental Actions and Commitments** have been taken into account in assessing the air quality effects of the Project:

- GG02 – The Mains Works Contractor(s) will undertake site inspections to check conformance to the measures set out within each of the management plans and their subordinate plans as set out within GG01.
- GG04 – Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the Project as set out within **Application Document 7.2 Outline Code of Construction Practice**.
- GG10 – As far as reasonably practicable and safe to do so, any activity carried out or equipment located within a construction compound that may produce dust, noise, vibration and lighting emissions, will be located away from sensitive receptors such as residential properties or designated ecological sites.
- GG12 – Vehicles and vessels will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. The operators of plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so. Electric or other low carbon plant and equipment will be used where available and where practicable.
- GG13 – Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including excavated materials, drop heights will be limited, where practicable.
- GG20 – Wheel washing facilities will be provided at each compound and intermittently along construction access tracks. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits. Dry sweeping of large areas will be avoided.
- GG21 – Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression.
- GG22 – Bonfires and the burning of waste material will be prohibited.

- S01 – Training will be provided to construction workers on the management of emissions (dust, noise, vibration, etc) in line with measures and methods defined in the Final CoCP.
- TT01 – All construction HGVs will adhere to the designated construction routes (Preliminary Access Routes (PARs)) to and from the site. As noted within **Application Document 7.4 Outline Construction Traffic Management Plan**.
- TT07 - The Main Works Contractor(s) will prepare a Driver Information Pack prior to construction commencing covering a variety of topics and providing information on the requirements of working on the Project, to form part of the CTMP.

15.8.7 Further air quality specific measures relevant to the control and management of air quality impacts during construction have been identified following the construction dust risk assessment as outlined in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**; these measures are included within **Application Document 7.3 Register of Environmental Actions and Commitments** and are as follows:

- AQ01 – Communications:
  - A stakeholder communications plan that includes community engagement will be developed and implemented before construction work commences.
  - Contact details for the Project will be displayed at the entrance to the main construction compounds. This will include an emergency telephone number. A free telephone helpline and website will be provided for the Project. This will be maintained and managed by the National Grid community relations team.
  - The Project helpline and website information will be visible on boards placed in appropriate locations where they will be visible to the public.
- AQ02 – Dust Management:
  - The Main Works Contractor(s) will develop and comply with a Dust Management Plan (DMP), which may include measures to control other air emissions, and will be implemented prior to construction.
- AQ03 – Site Management:
  - All dust and air quality complaints will be recorded and their cause(s) identified. Appropriate measures to reduce emissions will be implemented in a timely manner, and these measures will be recorded.
  - The complaints log will be made available to the local authority on request.
  - Any exceptional incidents that cause dust and/ or air emissions, either on- or off-site, and the action taken to resolve the situation will be recorded in the logbook.
  - Regular liaison meetings with other high risk construction sites within 500 m of the Order Limits will be held to ensure plans are coordinated and dust and particulate matter emissions are minimised. Off-site transport and delivery activities using shared sections of the Strategic Road Network and local road network will be considered to understand potential interactions and minimise associated dust and particulate matter emissions.

- AQ04 – Monitoring:
  - Daily on-site and off-site inspections will be undertaken, where receptors (including roads) are nearby, to monitor dust, record inspection results. The information collected from these inspections will be compiled within a log, which will be made available to the local authority on request. This will include regular dust soiling checks of surfaces such as street furniture, cars, and windowsills within 100 m of the site boundary, with cleaning to be provided if necessary.
  - The inspection log will be made available to the local authority on request.
  - There will be an increase in frequency of site inspections by the person accountable for air quality and dust issues on-site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
  - Dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations will be discussed with the local authority, if required. Where possible, baseline monitoring will commence at least three months before work commences on-site or, if it is a large site, before work on a phase commences.
- AQ05 – Preparing and maintaining the site:
  - Solid screens or barriers will be erected around dusty activities, where required, that are at least as high as any stockpiles on-site.
  - Specific activities will be fully enclosed where there is a high potential for dust production and the activity is ongoing for an extensive period.
  - Runoff of water or mud will be avoided where possible.
  - Site fencing, barriers and scaffolding will be kept clean using wet methods.
  - Materials that have the potential to produce dust from site will be removed as soon as possible, unless being re-used on-site. If they are being re-used on-site, they will be covered as described below.
  - Stockpiles will be covered, seeded or fenced to prevent wind whipping (where needed and depending on duration).
- AQ06 – Operating Vehicle/Machinery and Sustainable Travel:
  - A maximum speed limit will be imposed on construction access tracks and work areas. For longer length of construction access tracks, these speeds may be increased with suitable additional control measures provided, subject to the approval of the undertaker and with the agreement of the local authority, where appropriate.
  - A Construction Logistics Plan will be produced and complied with to manage the sustainable delivery of goods and materials.
- AQ07 – Operations:
  - Suitable dust suppression techniques, such as water sprays or local extraction, will be fitted to or used in conjunction with, cutting, grinding or sawing equipment.

- There will be an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Enclosed chutes and conveyors and covered skips will be used, where reasonably practicable.
- Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised and fine water sprays will be used on such equipment wherever appropriate.
- It will be ensured that equipment will be readily available on-site to clean any dry spillages, and spillages will be cleaned up as soon as reasonably practicable after the event using wet cleaning methods.

- AQ08 – Earthworks:
  - Earthworks and exposed areas/ soil stockpiles will be re-vegetated to stabilise surfaces as soon as practicable, where appropriate and using appropriate seed mix for what habitat the top soil was from.
  - Hessian, mulches or trackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
  - The cover will be removed in small areas during work and not all at once.
- AQ09 – Construction:
  - Scabbling (roughening of concrete surfaces) will be avoided if possible.
  - Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process, in which case appropriate additional control measures will be in place.
  - Fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
  - For smaller supplies of fine powder materials, bags will be sealed after use and stored appropriately to prevent dust.
- AQ10 – Trackout:
  - Vehicles carrying materials entering and leaving sites will be covered to prevent escape of materials during transport.
  - On-site construction access tracks will be inspected for integrity and any necessary repairs to the surface will be instigated as soon as reasonably practicable.
  - Hard surfaced haul routes will be installed where possible and regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers, and regularly cleaned.
  - An adequate area of hard surfaced road will be provided between the wheel wash facility and the site exit, wherever site size and layout permits.
  - Access gates will be located at least 10 m from receptors where possible.

- AQ11 – Throughout the construction phase, Stage IV Non-Road Mobile Machinery (NRMM) will be used as a minimum and Stage V will be used where possible. Additionally, use electric or other low carbon plant and equipment where practicable.
- AQ12 – The use of diesel or petrol powered generators will be avoided, and mains electricity or battery powered equipment will be used, where practicable.

  Where diesel generators are used, ensure the generators adhere to Stage V emissions standards and seek alternatives where possible, such as batteries or alternative fuel. Ensure they are placed as far from receptors as possible and that testing, if applicable, is kept to a minimum. Consideration will be given to increasing the release height of emissions for sufficient dispersion, and relevant abatement technology, if required.
- AQ13 – Construction vehicles will conform to relevant applicable standards for the vehicle type as follows:
  - Euro 4 (NOx) for petrol cars, vans and minibuses;
  - Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and
  - Euro VI (NOx and PM) for lorries, buses, coaches and heavy goods vehicles (excluding specialist abnormal indivisible loads).

15.8.8 A further air quality specific measure relevant to the control and management of impacts during the operation and maintenance phase has been identified following comments received from Planning Inspectorate in the scoping response (**Application Document 6.5.A2 Appendix 5.2 Scoping Opinion)**; this measure is included within **Application Document 7.3 Register of Environmental Actions and Commitments** and is as follows:

- AQ14 – Where maintenance activities are required during the operational phase and have the potential to generate dust or emissions, proportionate dust and emissions management measures consistent with those committed to for the construction phase shall be implemented, to minimise any effects on air quality.

15.8.9 Further measures that will mitigate air quality impacts are set out in **Application Document 7.4 Outline Construction Traffic Management Plan** (such as switching off plant and vehicles when not in use) and **Application Document 7.5 Outline Soil Management Plan** (such as measures to reduce soil erosion which can lead to airborne dust).

Additional Measures

15.8.10 Additional measures comprise mitigation measures over and above any embedded and control and management measures, for which the assessment has identified a requirement to further reduce significant environmental effects.

15.8.11 No additional mitigation measures, beyond the embedded and control and management measures identified above, are required.

15.9 Residual Effects Assessment

Construction Dust

15.9.1 A construction dust assessment has been undertaken in accordance with the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024), as detailed in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**. The construction dust risk assessment has identified high sensitivity human receptors (residential properties) within the study area, as well as high sensitivity ecological sites including Birkhill Wood, and Wheatley Wood (Ancient Woodlands), Treswell Wood (SSSI and Ancient Woodland), Brantingham Dale (SSSI), and Humber Estuary (Ramsar, SAC, SPA, and SSSI). A full list of designated ecological sites considered in the assessment is provided in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**.

15.9.2 The Project does not include any proposed demolition other than the dismantling of existing pylons which is not considered to be a dust generating activity and therefore demolition is not considered in the assessment. The dust emissions magnitude has been determined as large for earthworks, medium for construction, and large for trackout (deposition of dust and dirt from construction sites onto public roads by construction vehicles). Combining the dust emissions magnitude and area sensitivities, the overall risk of impacts with no applied mitigation for each construction activity has been determined. The potential risk of dust soiling is **high** for earthworks and trackout, and **medium** for construction. The potential risk of human health impacts is **low** for earthworks, construction and trackout. The potential risk of ecological impacts is **high** for earthworks, **medium** for construction and **low** for trackout.

15.9.3 The construction dust risk assessment determined that the overall worst-case risk of dust effects would be high for human and ecological receptors. Appropriate measures have been identified and incorporated into **Application Document 7.3 Register of Environmental Actions and Commitments** and are summarised in **Application Document 6.15.A2 Appendix 15.2 Construction Dust Methodology and Assessment**.

15.9.4 With the implementation of these measures, the temporary effects of construction dust have been determined to be **not significant**.

15.9.5 No option-specific difference in significance was identified.

Construction Vehicle Emissions

Human Receptors

15.9.6 Construction routes have been selected that are not within or adjacent to an AQMA, therefore the less stringent IAQM and EPUK screening criteria apply for human receptors which requires an increase of greater than 500 LDV AADT flows and greater than 100 HDV AADT flows for detailed modelling of construction vehicle emissions to be required (Institute of Air Quality Management and Environmental Protection UK, 2017). Review of the traffic data for the construction traffic routes and construction access tracks for the Project indicated that there are a number of links which exceed the IAQM and EPUK Development Control guidance screening criteria

for human receptors (Institute of Air Quality Management and Environmental Protection UK, 2017). These affected roads are displayed in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**. Further details of the construction traffic flows are presented in **Application Document 6.14 Chapter 14 Traffic and Transport** and **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**. It should be noted that PAR 142 (M62 from A614 interchange to M18 interchange) exceeded the IAQM and EPUK screening criterion for HDV flows, with an increase of 144 HDV AADT. Given that the M62 forms part of the strategic road network and the nearest human receptors are located approximately 60 m from the carriageway, the DMRB screening criterion of 200 HDV AADT (National Highways, 2024) is considered more appropriate. On this basis, PAR 142 was scoped out of the detailed dispersion modelling assessment. This approach was discussed with East Riding of Yorkshire Council, within whose administrative area PAR 142 is located, and no concerns were raised regarding the proposed methodology.

15.9.7 A total of 40 worst-case representative human receptors were modelled for the construction phase vehicle emissions assessment, as displayed in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**. Impacts at each receptor were categorised as per the IAQM and EPUK Development Control guidance impact matrices (as per Table 15.9) (Institute of Air Quality Management and Environmental Protection UK, 2017) for each of the modelled pollutants (NO_2, PM_{10} and $PM_{2.5}$).

15.9.8 The maximum total concentrations for the respective pollutants in either the Do Minimum or Do Something scenarios all occur at R_696, which is located on a residential property façade on Riplingham Road at the junction of PAR 10B, PAR 13, PAR 14 and PAR 20. The modelled concentrations at R_696 are presented in Table 15.15.

Table 15.15 – Maximum modelled pollutant concentrations at human receptors

Pollutant	Base Year (2024) (µg/m^3)	Do Minimum (2029) (µg/m^3)	Do Something (2029) (µg/m^3)	AQAL (µg/m^3)
NO_2	16.5	10.7	10.9	40
PM_{10}	15.8	15.4	15.5	40
$PM_{2.5}$	7.4	7.0	7.1	20

15.9.9 In the context of the IAQM impact descriptors, the maximum concentrations, as reported at R_696, mean that concentrations at all receptors are less than 75% of the relevant long-term (annual mean) AQAL for each pollutant, which is 40 µg/m^3 for NO_2 and PM_{10}, and 20 µg/m^3 for $PM_{2.5}$.

15.9.10 A summary of the impact on human receptors from construction vehicle emissions is presented in Table 15.16. Full results tables for each pollutant by receptor are presented in **Application Document 6.15.A3 Appendix 15.3 Construction Vehicle Emissions Modelling**.

Table 15.16 – Summary of magnitude of impact on human receptors from construction phase vehicle emissions

Pollutant	Number of receptors within each IAQM impact descriptor category				
	Negligible (0 or 1-6% increase relative to AQAL)	Slight adverse (6-10% increase relative to AQAL)	Moderate adverse (greater than 10% increase relative to AQAL)	Substantial adverse**	Maximum increase ($\mu g/m^3$)
NO_2	40	0	0	0	0.2 (1%* of AQAL)
PM_{10}	40	0	0	0	0.1 (0%* of AQAL)
$PM_{2.5}$	40	0	0	0	0.1 (1%* of AQAL)

* Percentage change rounded to nearest whole number as per IAQM guidance

** Substantial adverse impacts are not possible where the total concentration is less than 75% of the AQAL

15.9.11 In line with the approach set out in the IAQM and EPUK Development Control guidance (Institute of Air Quality Management and Environmental Protection UK, 2017), impacts at all human receptors are classified as negligible for each pollutant.

15.9.12 LAQM.TG(22) (Department of Food & Rural Affairs , 2025) states that exceedances of the 1-hour mean AQS objective for NO_2 are unlikely to occur where the annual mean is less than 60 $\mu g/m^3$. The highest total Do Something concentration of 10.9 $\mu g/m^3$ at R_696 demonstrates that the construction traffic emissions from the Project are unlikely to cause any receptors to exceed the 1-hour mean AQAL for NO_2.

15.9.13 Following the procedure in paragraph 7.100 of LAQM.TG(22) (Department of Food & Rural Affairs , 2025), the likelihood of potential exceedances of the 24-hour mean PM_{10} AQS objective can be inferred from the PM_{10} annual mean concentration. Exceedances of the 24-hour mean PM_{10} AQS objective are likely if the annual mean PM_{10} concentration exceeds 32 $\mu g/m^3$. Therefore, exceedances of the 24-hour mean AQAL are considered very unlikely as the maximum modelled annual PM_{10} concentration for the Do Something scenario is 15.5 $\mu g/m^3$.

15.9.14 It should also be noted that of the 40 modelled receptors, there were no exceedances of the 2040 $PM_{2.5}$ target concentration of 10 $\mu g/m^3$.

15.9.15 No option-specific difference in significance was identified.

Ecological Receptors

15.9.16 As stated previously in paragraph 15.4.31, a desk study showed there are no SACs, possible SACs, SPAs, Potential SPAs, Ramsar sites, or SSSIs located within 200 m of the ARN as defined by the DMRB LA105 screening criteria (National Highways, 2024). Therefore further assessment of construction vehicle impacts on these

protected ecological sites has been screened out as potential impacts are considered to be negligible.

15.9.17 However, five non-statutorily designated LWSs and one non-designated Wildlife Trust Reserve were identified within 200 m of the ARN as defined by the DMRB LA105 screening criteria (National Highways, 2024), and assessed in accordance with IAQM Ecological guidance (Institute of Air Quality Management, 2020). The ARN and modelled receptor locations are displayed in **Application Document 6.15.F2 Figure 15.2 Air Quality Construction Vehicle Emissions Study Area and Receptor Locations**.

15.9.18 Table 15.17 shows the modelled NOx concentrations predicted at each ecological receptor representing the non-statutory designated sites. It should be noted that the results represent the effects of the Project in isolation only, as there is no requirement to undertake a separate in-combination assessment for these sites as they are not protected under either the Conservation of Habitats and Species Regulations 2017 (HM Government, 2017) or the Wildlife and Countryside Act 1981 (HM Government, 1981).

Table 15.17 – Summary of impact on ecological receptors from construction phase vehicle emissions

Ecological Site	Annual Mean NOx Concentration (µg/m^3)			Change in concentration (DS vs DM 2029)	% Change in relation to AQAL
	Base Year (2024)	Cumulative Do Minimum (DM) (2029)	Cumulative Do Something (DS) (2029)		
Woodhill Path, Cottingham LWS	14.5	11.8	11.8	0.0	0
Drove Road LWS	20.4	15.1	15.1	0.0	0
Jillywood Lane LWS	23.1	16.3	16.4	0.1	0
Bridgehead YWTR	29.0	20.9	21.0	0.1	0
Dunswell Adits Candidate LWS	29.6	20.7	20.7	0.0	0
Figham Pastures LWS	12.9	10.9	10.9	0.0	0

15.9.19 The results in Table 15.17 show that the modelled NOx concentrations are below the AQAL (critical level of 30 µg/m^3) and the changes in concentrations are less than 1% of the AQAL at all receptors and therefore effects are considered to be **negligible** in accordance with the IAQM Ecological guidance (Institute of Air Quality Management, 2020).

15.9.20 Construction vehicle emissions as a result of the Project have been determined as **not significant**, given the negligible change in concentrations relative to AQALs at all reported human and ecological receptors, for all pollutants assessed.

15.9.21 No option-specific difference in significance was identified.

Construction Plant and Equipment Emissions

15.9.22 Temporary construction compounds are required throughout the Order Limits to facilitate construction activities, including the storage of plant and materials, and the provision of parking, site offices and welfare facilities. Temporary generators may be used at these construction compounds, and other NRMM would be operational throughout the construction phase. Further details on the type of NRMM that would be used is presented in **Application Document 6.16.A3 Appendix 16.3 Construction Noise and Vibration Data.** Whilst some NRMM may be used elsewhere within the Order Limits, its use would be transient and the majority of stationary plant and equipment would be located within construction compounds.

15.9.23 There are no sensitive human receptors (i.e. residential properties) or non-statutorily designated ecological sites within 200 m of any of the construction compounds (main or temporary). There are no SACs, possible SACs, SPAs, Potential SPAs, Ramsar sites or SSSIs located within 500 m of the construction compounds, therefore in line with Step 1 of Natural England's Standard Advice, there is no credible risk of an adverse effect on statutory designated ecological sites, and no further detailed modelling or in combination assessment of temporary generator use is required. Commitment AQ12 in **Application Document 7.3 Register of Environmental Actions and Commitments** (and above in section 15.8) requires any diesel generator use to comply with Stage V emissions standards. Given the temporary generators' short-term presence, limited hours of operation and stringent emission standard, the NOx emissions are not considered to give rise to a likely significant effect.

15.9.24 In addition, background pollutant concentrations are well below the respective AQAL for each pollutant, as presented in Table 15.13 for the peak construction year (2029). Several control measures relating to NRMM and plant emissions have been included in **Application Document 7.3 Register of Environmental Actions and Commitments** including commitments AQ11, AQ12, and GG12.

15.9.25 Due to the temporary and transient nature of NRMM and plant operation, low background concentrations, proximity of receptors and implementation of control measures, the use of construction plant and equipment is unlikely to result in significant effects on local air quality that would result in exceedances of the AQALs at human or ecological receptors within the study area. The use of NRMM outside construction compounds would be short-term and transient in nature and therefore would not give rise to sustained emissions at any given location. In addition, the IAQM Construction Dust guidance (Institute of Air Quality Management, 2024) states that '*experience of assessing the exhaust emissions from on-site plant (NRMM) and site traffic suggests that, with suitable controls and site management, they are unlikely to make a significant impact on local air quality.*' As such, it is considered that the temporary effect of construction plant and equipment emissions on human and ecological receptors would be **not significant**.

15.9.26 No option-specific difference in significance was identified.

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