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Yorkshire Green Energy Enablement (GREEN) Project

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Yorkshire GREEN Project Chapter Review Form

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13. Air Quality

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13. Air Quality

13.1 Introduction

13.1.1 This chapter presents the assessment of the likely significant effects of Yorkshire Green Energy Enablement (GREEN) Project (referred to as the Project or Yorkshire GREEN throughout the Environmental Statement (ES)) with respect to air quality. This chapter should be read in conjunction with the Project description provided in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3** and with respect to relevant parts of the following chapters:

- **Chapter 8: Biodiversity, Volume 5, Document 5.2.8;** and
- **Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12.**

13.1.2 This chapter describes:

- the legislation, policy and technical guidance that has informed the assessment (**Section 13.2**);
- consultation and engagement that has been undertaken and how comments from consultees relating to air quality have been addressed (**Section 13.3**);
- the methods used for baseline data gathering (**Section 13.4**);
- overall baseline (**Section 13.5**);
- embedded environmental measures relevant to air quality (**Section 13.6**);
- the scope of the assessment for air quality (**Section 13.7**);
- the methods used for the assessment (**Section 13.8**);
- the assessment of air quality effects (**Section 13.9**);
- assessment of cumulative effects (**Section 13.10**); and
- a summary of the significance conclusions (**Section 13.11**).

Project overview

13.1.3 The Project is divided into six sections for ease of reference as indicated in **Figure 1.2, Volume 5, Document 5.4.1**. In summary Yorkshire GREEN comprises the following new infrastructure within the Order Limits:

- Section B (North-west of York Area):
 - Shipton North and South 400kV cable sealing end compounds (CSECs) and 230m of cabling;
 - the 2.8km YN 400kV overhead line (north of proposed Overton Substation);
 - Overton 400/275kV Substation; and

- two new sections of 275kV overhead line south of Overton Substation: the XC 275 kV overhead line to the south-west (2.1km) and the SP 275kV overhead line to the south-east (1.5km);
- Section D: Tadcaster Tee West and East 275kV CSECs; and 350m of cabling; and
- Section F: Monk Fryston 400kV Substation (adjacent to the existing substation).

13.1.4 Works to existing infrastructure within the Order Limits would comprise:

- Section A (Osbalwick Substation): Minor works at Osbalwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry and works to one existing pylon. All substation works would be within existing operational land.
- Section B (North-west of York Area): Reconductoring of 2.4km of the 2TW/YR 400kV overhead and replacement of one pylon. A mixture of decommissioning, replacement and realignment of 5km of the existing 275kV Poppleton to Monk Fryston (XCP) overhead line between Moor Monkton and Skelton. To the south and south-east of Moor Monkton the existing overhead line would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) would be permanently removed. A 2.35km section of this existing overhead line permanently removed between the East Coast Mainline (ECML) Railway and Woodhouse Farm to the north of Overton.
- Section C (Moor Monkton to Tadcaster): Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section D (Tadcaster Area): Replacement of one pylon on the Tadcaster Tee to Knaresborough (XD/PHG) 275kV overhead line route.
- Section E (Tadcaster to Monk Fryston). Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section F (Monk Fryston Area): Reconfiguration of the existing 275kV Poppleton to Monk Fryston (XC) overhead line at its southern end to connect into the new substation at Monk Fryston; Reconfiguration of the Monk Fryston to Eggborough 400kV 4YS overhead line to connect into the new substation at Monk Fryston.

13.1.5 Please refer to **Chapter 3: Description of the Project, Volume 5, Document 5.2.3** for more information on the different components of the Project

Limitations and assumptions

13.1.6 The Project has been based on the principal that measures have been ‘embedded’ into the Project design to avoid and reduce potential significant adverse effects. This approach is informed by the iterative design process. The Project would ensure that standard good practice construction measures are adopted, through the implementation of a **Code of Construction Practice (CoCP), Appendix 3B, Volume 5, Document 5.3.3B**. The appraisal of potential effects therefore assumes that both design mitigation and good practice measures are in place.

13.1.7 The assessment has been based on the indicative construction programme and details of construction activities. These have also been used to estimate construction traffic flows. The construction traffic estimates identify the ‘peak’ periods when traffic flows are likely to be greatest in order to assess the reasonable worst case effects from the Project. However, as the consideration of air quality effects from construction road traffic is largely based on the consideration of annual average pollutant concentrations this has been taken into account in the assessment.

13.2 Relevant legislation, planning policy and technical guidance

13.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to air quality. Further information on policies relevant to the Project is provided in **Chapter 5: Legislation and Policy Overview, Volume 5, Document 5.2.2.**

Legislation

13.2.2 A summary of the relevant legislation is given in **Table 13.1.**

Table 13.1 – Legislation relevant to the air quality assessment

Legislation	Legislative Context
The Environment Act 2021 ¹	<p>The Environment Act 2021 has introduced legally binding duties on the government to bring forward at least two air quality targets into secondary legislation by 31 October 2022. This duty sits within the environmental targets framework outlined in Part 1 of the Act.</p> <p>The proposed air quality targets are:</p> <ul style="list-style-type: none"> • Annual Mean Concentration Target ('concentration target') - maximum concentration of 10µg/m³ to be met across England by 2040; and • Population Exposure Reduction Target ('exposure target') - a 35% reduction in population exposure by 2040 (compared to a base year of 2018). <p>The first target should look at reducing the annual average of Particulate Matter smaller than 2.5 µm (PM_{2.5}), and the second air quality target should be a long-term target. This recognises the long-term health impacts of which air pollution can impose.</p>
The Environment Act 1995 ²	<p>The Environment Act 1995 relates to a wide range of environmental issues. The Act covers the control of pollution and lays out the responsibility of the governing bodies in the UK responsible for the enforcement of environmental laws.</p> <p>Part IV of the Environment Act 1995 requires that Local Authorities periodically review air quality within their individual</p>

¹UK Government (2021). Environment Act 2021. (Online). Available at: <https://www.legislation.gov.uk/ukpga/2021/30/section/2/enacted> (Accessed March 2022).

² UK Government (1995). Environment Act 1995. (Online) Available at: <https://www.legislation.gov.uk/ukpga/1995/25/contents> (Accessed 10 August 2021)

Legislation	Legislative Context
The Air Quality Regulations 2000 ³	<p>areas. This process of Local Air Quality Management (LAQM) is an integral part of delivering the Government's Air Quality Objectives (AQOs).</p>
The 2007 Air Quality Strategy for England, Scotland, Wales and Northern Ireland ⁴	<p>The Environment Act 1995 required the adoption of an Air Quality Strategy containing standards, objectives and measures for improving ambient air quality.</p> <p>The 2007 Air Quality Strategy is designed to meet that requirement and provides a framework for improving air quality at a national and local level and supersedes the previous strategy published in 2000. It imposes a number of obligations on local authorities to manage air quality.</p> <p>Central to the Air Quality Strategy are health-based criteria for certain air pollutants; these criteria are based on medical and scientific reports on how and at what concentration each pollutant affects human health and mirror the AQOs set out in the Air Quality (England) Regulations 2000. The AQOs are policy targets often expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedances, over a specified averaging period.</p>
The Air Quality Standards (England) Regulations 2010 (as amended) ⁵	<p>The Air Quality Standards (AQS) Regulations report limit values at differing averaging periods for certain pollutants. There are limits provided for the protection of human health for Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Benzene, Carbon Monoxide (CO), Lead (Pb) and particulate matter of an aerodynamic diameter of 10µm (PM₁₀). Target values have been set for the concentration of particulate matter with an aerodynamic diameter of 2.5µm (PM_{2.5}).</p>

³ UK Government (2002). The Air Quality Regulations 2000, UK Statutory Instruments 2000 No. 928. (Online) Available at: <https://www.legislation.gov.uk/ukxi/2000/928/contents/made> (Accessed 10 August 2021)

⁴ Defra. (2007). The Air Quality Strategy for England, Scotland Wales and Northern Ireland. (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69337/pb12670-air-quality-strategy-vol2-070712.pdf (Accessed 10 August 2021)

⁵ UK Government (2010). The Air Quality Standards Regulations 2010, UK Statutory Instruments 2010 No. 1001. (Online) Available at: <https://www.legislation.gov.uk/ukxi/2010/1001/contents/made> (Accessed 10 August 2021)

Legislation	Legislative Context
Environment Protection Act (EPA) 1990 (as amended) ⁶	A limit value for the concentration of PM _{2.5} is also provided. All limit values included in these Regulations should not be exceeded.
The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 ⁷	Part III of the EPA 1990 (as amended) contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance. Section 79 of the EPA defines, amongst other things, smoke, fumes, dust and smells emitted from industrial, trade or business premises so as to be prejudicial to health or a nuisance, as a potential Statutory Nuisance. Fractions of dust greater than 10µm (i.e. greater than PM ₁₀) in diameter typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the UK Air Quality Strategy. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.
The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018 ⁷	The Non-Road Mobile Machinery (NRMM) Regulations provide the requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery.

Planning policy

13.2.3 A summary of the relevant national and local planning policy is given in **Table 13.2**. In September 2021, the Department of Business, Energy and Industrial Strategy (BEIS) consulted upon a review of energy National Policy Statements (NPS) with consultation closing on 29 November 2021. The energy NPS were reviewed to reflect the policies and broader strategic approach set out in the Energy white paper and ensure a planning framework was in place to support the infrastructure requirement for the transition to net zero. There are no substantive changes with regard to air quality within those draft Energy National Policy Statements which are considered to be relevant to the Project. There is no review and update on National Planning Policy Framework and Clean Air Strategy 2019.

⁶ UK Government (1990). Environment Protection Act 1990, Control of dust and particulates associated with construction (Section 79). (Online) Available at:

<https://www.legislation.gov.uk/ukpga/1990/43/contents> (Accessed 10 August 2021)

⁷ UK Government (2018). The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018. (Online) Available at:

<https://www.legislation.gov.uk/ukxi/2018/764/made> (Accessed 10 August 2021)

Table 13.2 – Planning policy relevant to the air quality assessment

Policy	Policy Context
National planning policy	
Overarching National Policy Statement for Energy (EN-1) ⁸	<p>Section 5.2: Paragraph 5.2.6 establishes that where a project is likely to have adverse effects on air quality, an assessment of such impacts must be considered in the ES.</p> <p>Paragraph 5.2.7 highlights that an ES should describe:</p> <ul style="list-style-type: none">• “any significant air emissions, their mitigation 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 emission levels of the proposed project, after mitigation methods have been applied;• existing air quality levels and the relative change in air quality from existing levels;• and any potential eutrophication impacts.” <p>This policy requirement is addressed in Section 13.5 (baseline), 13.6 (embedded measures) and 13.9 (assessment of effects).</p>
National Planning Policy Framework (NPPF) ⁹	<p>Paragraph 186 states: “<i>Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.</i>”</p>

⁸ Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed 10 August 2021)

⁹ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework. (Online) Available at: <https://www.gov.uk/guidance/national-planning-policy-framework> (Accessed 10 August 2021)

Policy	Policy Context
Clean Air Strategy 2019 ¹⁰	<p>There are AQMAs declared by the Local Authorities within which the Order Limits fall. No AQMAs are present within the Order Limits and construction traffic is not routed through any AQMAs declared outside the Order Limits. Furthermore, construction traffic levels are below the screening criteria specified by best practice guidance, employed in this assessment and therefore have been scoped out.</p> <p>This policy requirement is addressed in Section 13.7 (scope of assessment).</p>

Defra's Clean Air Strategy outlines the Government's proposed ambitions relating to reducing air pollution in order to protect health and nature, whilst boosting the economy. The strategy sits alongside three other UK government strategies: The Industrial Strategy, the Clean Growth Strategy¹¹ and the 25 Year Environment Plan¹². The Clean Air Strategy proposes to halve the number of people living in locations where concentrations of particulate matter are above the World Health Organization (WHO) guideline limit of 10µg/m⁻³ by 2025 and work in close collaboration with industry to explore further opportunities for industrial emissions reductions by developing a series of sector roadmaps to set standards aimed at making UK industry world leaders in clean technology.

According to the Clean Air Strategy, developments should not conflict with the Government's aims of reducing exposure to PM_{2.5} below the WHO guideline with appropriate mitigation implemented.

Local planning policy

Hambleton District Council Local Plan - 2022 ¹³	<p>Policy RM4: Air Quality</p> <p>The Air Quality policy in the Local Plan outlines the Council's commitment to protecting and improving air quality within the District. Proposals will be categorised</p>
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¹⁰ Defra (2019). Clean Air Strategy 2019. (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf (Accessed 10 August 2021)

¹¹ BEIS (2018) Clean Growth Strategy (Online). Available at: <https://www.gov.uk/government/publications/clean-growth-strategy> (Accessed 15 October 2021).

¹² Defra (2019) 25 Year Environment Plan (Online). Available at: <https://www.gov.uk/government/publications/25-year-environment-plan> (Accessed 15 October 2021)

¹³ Hambleton District Council (2022). Hambleton District Council Local Plan 2022. (Online) Available at: <https://www.hambleton.gov.uk/homepage/12/publication-draft> (Accessed 5 July 2022)

Policy	Policy Context
Saved Policies of the York Local Plan, 2005 ¹⁴	<p>based on the potential for adverse impact to air quality, with the requirement for mitigation where necessary.</p> <p>Policy GP4b: Air Quality</p> <p>Details that an air quality assessment is necessary where:</p> <p><i>“a) there is a cumulative significant impact of traffic generation (an increase of more than 5% traffic flow), or</i> <i>b) there is a significant number (300 or more spaces) of additional parking to be provided, or</i> <i>c) coach and lorry parking is to be provided, or</i> <i>d) there is already a recognised congestion or air quality problem in the area, or</i> <i>e) there will potentially be significant emissions to the air from sources other than traffic.”</i></p> <p>The Project does not meet the above criteria (see Section 13.7, scope of the assessment) and has only considered impacts from construction dust.</p>
City of York Local Plan - Publication Draft, 2018 ¹⁵	<p>Policy ENV1: Air Quality</p> <p>Air Quality requires all major and minor proposed developments to identify sources of emissions to air and submit an emissions statement.</p>
Selby Draft Local Plan - Preferred Options, 2021 ¹⁶	<p>Preferred Approach NE8: Air Quality</p> <p>Developments must not:</p> <ol style="list-style-type: none"> 1. result in further significant air quality deterioration, or the need to declare further Air Quality Management Areas (AQMAs); and 2. result in any increase in the number of people exposed to poor air quality; and 3. conflict with elements of an Authority Air Quality Action Plan (AQAP). <p>Developments will only be permitted where the impact to air quality is acceptable, and mechanisms are in place to prevent further exposure.</p>

¹⁴ City of York Council (2005). City of York Local Plan Publication Draft. (Online) Available at: <https://www.york.gov.uk/downloads/download/820/the-development-control-local-plan-2005-and-proposals-maps> (Accessed 10 August 2021)

¹⁵ City of York Council (2018). City of York Local Plan Publication Draft. (Online) Available at: <https://www.york.gov.uk/downloads/download/581/local-plan-publication-draft-2018-consultation> (Accessed 10 August 2021)

¹⁶ Selby District Council (2021). Selby District Council Local Plan Preferred Options Consultation. (Online) Available at: <https://www.selby.gov.uk/localplan> (Accessed 10 August 2021)

Policy	Policy Context
Leeds Core Strategy, 2019 ¹⁷	Policy EN8/P10: There are no policies specifically relating to air quality within the Core Strategy, however air quality is used as a rationale for Policy EN8 regarding electric vehicle charging and Policy P10 ensuring that new development does not adversely impact air quality.

Technical guidance

13.2.4 A summary of the technical guidance for air quality is given in **Table 13.3**.

Table 13.3 – Technical guidance relevant to the air quality assessment

Technical Guidance Document	Context
Defra (2018) Local Air Quality Management (LAQM) Technical Guidance LAQM.TG16 ¹⁸	Provides guidance for governmental and private sectors to discharge their obligations under the LAQM regime. It contains guidance on numerous areas including, for example, screening tools and methodologies, air quality monitoring, estimating emissions and dispersion modelling.
Institute of Air Quality Management (IAQM) (2016) Guidance on the Assessment of Dust from Demolition and Construction ¹⁹	Provides a four-step process for evaluating the risk associated with dust emissions from construction and demolition sites on different types of receptors with respect to dust soiling, health effects and ecological effects.
Environmental Protection UK and IAQM (2017) Land-Use Planning and Development Control: Planning for Air Quality ²⁰	Provides a procedure for screening potential air quality effects of new development and a procedure for assessing the significance of air quality effects in planning applications.
IAQM (2020) Guide to the Assessment of Air Quality	Provides guidance on the air quality impacts of development on designated nature conservation sites but establishes that the assessment of the effects that air quality impacts may have on habitats and species should be the responsibility of a suitability qualified and experienced ecologist.

¹⁷ Leeds City Council (2019). Leeds Core Strategy: Leeds Local Plan, 2019. (Online) Available at: <https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction> (Accessed 10 August 2021)

¹⁸ Defra (2018). Local Air Quality Management Technical Guidance (TG16). (Online). Available at: <https://laqm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf> (Accessed August 2021).

¹⁹ IAQM (2016). Guidance on the assessment of dust from demolition and construction. Version 1.1. (Online) Available at: [REDACTED] (Accessed 10 August 2021).

²⁰ IAQM (2017). Land-Use Planning & Development Control: Planning for Air Quality. Version 1.2. (Online) Available at: [REDACTED] (Accessed 10 August 2021).

Technical Guidance Document	Context
Impacts on Designated Nature Conservation Sites ²¹	
National Grid Electricity Transmission plc (“National Grid”) (2019) Environmental Action Plan ²²	<p>This document outlines National Grid’s Electricity and Transmission approach and methodology to developing an Environmental Action Plan to reduce the environmental impact of the network. It identifies high opportunity environmental aspects to work towards relating to air quality:</p> <ul style="list-style-type: none"> • reduction in capital carbon from construction design as much as is feasible and offset the remaining to deliver net zero carbon emissions during construction, and; • alternative fuel construction vehicles to reduce impact on transport and logistics.
Highways England (2019) Design Manual for Roads and Bridges (DMRB) LA 105 ²³	Provides a procedure for screening potential air quality effects of new and existing roads and a procedure for assessing the significance of air quality effects associated with traffic emissions.

13.3 Consultation and engagement

Overview

13.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Chapter 4: Approach to Preparing the ES, Volume 5, Document 5.2.4.**

Scoping Opinion

13.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 28 April 2021. A summary of the relevant responses received in the Scoping Opinion in relation to air quality and confirmation of how these have been addressed within the assessment to date is presented in **Table 13.4.**

²¹ IAQM (2019). A guide to the assessment of air quality impacts on designated nature conservation sites. Version 1.0. (Online) Available at: [REDACTED]

(Accessed 10 August 2021)

²² National Grid (2019). NGET_A11.05 – Environmental Action Plan and Methodology December 2019. (Online) Available at: [REDACTED]

(Accessed 10 August 2021)

²³ Highways England (2019). Transport Scotland, Welsh Government and Department for Infrastructure. Design Manual for Roads and Bridges (DMRB): LA 105 Air quality. (Online) (Accessed 10 August 2021).

Table 13.4 – Summary of EIA Scoping Opinion responses for air quality

Consultee	Consideration	How addressed in this ES
Planning Inspectorate	Agreement that the effect of construction dust on human health can be scoped out of the assessment.	Construction dust effects on amenity have been scoped into the assessment (see below) (see Section 13.9). As this assessment was undertaken using the standard IAQM methodology, it was decided that details of the effects on human health (through particulate matter emissions) would be presented for information.
Planning Inspectorate	Requirement to provide sufficient information on construction dust effects on amenity.	An assessment of construction dust effects has been included (see Section 13.9).
Planning Inspectorate	Agreement that the effect of construction dust on ecological receptors can be scoped out of the assessment.	Construction dust effects on amenity have been scoped into the assessment (see Section 13.9). As this assessment was undertaken using the standard IAQM methodology, it was decided that details of the effects on ecological receptors would be presented for information.
Planning Inspectorate	Further information is required to confirm that effects from non-road mobile machinery can be scoped out of the assessment	<p>These effects have been scoped out since construction plant emissions are controlled by the Non-Road Mobile Machinery (Emission of Gaseous and Particulate Pollutants) Regulations 2018 and the scale, duration, and distance of construction activity to relevant receptors is not considered to be of a magnitude that would result in significant effects. Construction plant will be temporary and in most cases for much shorter durations than a calendar year. Details of assumptions are provided in Appendix 14.B – Construction plant and activity assumptions, Volume 5, Document 5.3.14B accompanying Chapter 14: Noise and vibration, Volume 5, Document 5.2.14.</p> <p>Additionally, according to LAQM.TG(16) guidance, with the application of suitable control measures and site management, exhaust emissions from on-site NRMM are “<i>unlikely to make a significant impact on local air quality. In the vast majority of cases they will not need to be quantitatively assessed</i>”.</p>

Consultee	Consideration	How addressed in this ES
Planning Inspectorate	Agreement that pollutant emissions from construction vehicles and operational traffic emissions can be scoped out of the assessment.	These effects have not been assessed and remain scoped-out. Further justification is included in Section 13.7 considering further comments by Hambleton District Council's Environmental Health Officer (see also Section 13.3) on construction traffic travelling through Shipton.
Planning Inspectorate	Study Area to be reviewed as construction routes referenced during scoping were provisional.	The Study Area was updated according to the confirmed construction routes and is presented in Section 13.4 .
North Yorkshire County Council ²⁴	It is recognised that air quality effects may arise from the construction and operational phases but are not expected to be significant for assessment in the ES provided that a CoCP is adopted. CoCP mitigation measures during construction are provided in Appendix 13.2, the relevance of which will be considered as more detail emerges.	Noted, a CoCP, Appendix 3B, Volume 5, Document 5.3.3B will be submitted with the DCO application. It will cover the measures relating to air quality that normally form part of a CoCP.
Public Heath England	We note that the applicant has screened out a number of items relating to operation within their Air Quality section within their scoping documentation. We agree that this development is likely to have a negligible impact on air quality during operation, but Air Quality should still be considered during the construction phase	For completeness an assessment of construction dust effects on ecological receptors has been included as part of the assessment of dust effects (see Section 13.9).
Public Heath England	Our position is that pollutants associated with road traffic or combustion, particularly particulate matter and oxides of nitrogen are non-threshold, i.e., an exposed population is likely	Noted. This is considered in the Health and Wellbeing assessment. (See Chapter 15, Volume 5, Document 5.2.15). Effects from construction road traffic have not been assessed and are scoped-out of the assessment.

²⁴ The local authorities' boundaries and titles are correct at the time of submission November 2022. North Yorkshire County Council, Hambleton District Council, Selby District Council, Ryedale District Council, Scarborough Borough Council, Harrogate Borough Council, Craven District Council and Richmondshire District Council are expected to form a new single council (North Yorkshire Council) on 1 April 2023 as a result of Local Government Reorganisation.

Consultee	Consideration	How addressed in this ES
	to be subject to potential harm at any level and that reducing public exposures of non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure), maximise co-benefits (such as physical exercise). We encourage their consideration during development design, environmental and health impact assessment, and development consent	Further justification is included in Section 13.7 considering further comments by Hambleton District Council's Environmental Health Officer (see also Section 13.3) on construction traffic travelling through Shipton.

Statutory consultation

- 13.3.3 Statutory Consultation took place between 28 October and 9 December 2021 in accordance with the Planning Act 2008. Prescribed and non-prescribed consultees and members of the public were included in the consultation. Various methods of consultation and engagement were used in accordance with the SoCC including letters, a dedicated project website, public exhibitions, publicity and advertising in newspapers and webinar briefings.
- 13.3.4 National Grid prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. National Grid sought feedback on the environmental information presented in that report. Feedback received during statutory consultation was considered by National Grid and incorporated where relevant in the design of the Project.
- 13.3.5 A summary of the relevant responses received in response to statutory consultation, together with any subsequent discussions held in relation to air quality and confirmation of how these have been considered within the assessment to date is presented in **Table 13.5**. Statutory consultation representations and National Grid's responses is provided in **Volume 6, Document 6.1 (Consultation Report)**.

Table 13.5 – Summary of statutory consultation responses and technical engagement

Consultee	Comments and consideration	How addressed in this ES
Canal & River Trust	The Canal & River Trust note that section 13 of the PEIR identified measures that will be employed to help prevent the spread of dust exposed from the project (Table 13.18). This identifies a need for the	Dust management measures are incorporated into the CoCP, Volume 5,

Consultee	Comments and consideration	How addressed in this ES
	<p>provision of a Dust Management Plan. We request that this plan should include measures to limit risks of dust nuisance to the river from electricity cable works and the transport of materials to and from site (including form nearby access roads), and that details should be approved prior to the commencement of development.</p>	<p>Document 5.3.3B which will be implemented via DCO Requirement 5.</p>
<p>North Yorkshire County Council and Selby District Council</p>	<p>In response to PEIR Volume 2, Chapter 13 ‘Air Quality’: Construction Phase 13.7.7 Effects of pollutant emissions from construction vehicles have been scoped out of the assessment, and I would concur with the assessment that the proximity of the works to the district’s only designated Air Quality Management Area (AQMA) is such that significant air quality impact from construction traffic movements is unlikely. Operational Phase 13.12 Further work is to be undertaken regarding operational air quality effects, notably type, number, location or operational hours of such machinery and likely emissions. In order to appreciate the likelihood of operational air quality impacts in the absence of technical data, I would refer to LAQM/Defra background mapping data. Whilst there may be other pollutants associated with specific machinery, I would concur with the report that significant air quality impacts are unlikely. This is subject to further assessment in relation to type, number, location or operational hours of such machinery and likely emissions.</p>	<p>Further information on the reasoning for scoping out effects can be found in Section 13.7.</p>

Technical engagement

13.3.6 Given the limited comments received as part of the statutory consultation feedback, which either agreed with the scope of assessment or identified the need to incorporate dust management measures as part of the Project, no detailed technical engagement was required with the local planning authority environmental health officers. However, as part of wider engagement comprising regular meetings with the local planning authorities, the planning officer for Hambleton District Council made National Grid aware of a potential air quality issue at Shipton by Beningbrough and concerns about the potential impacts of construction traffic being routed through Shipton. As such, Hambleton District Council’s Environmental Health Officer was contacted for further information. It was confirmed that air quality monitoring was commenced in Shipton in early 2022 and will be completed in 2023 when data will be submitted to Defra. Further information on this can be found in **Section 13.7**.

13.4 Data gathering methodology

Study Area

- 13.4.1 The Study Area for the air quality assessment is defined as the Order Limits together with the Zones of Influence (ZOIs). ZOIs for air quality are the area immediately around the Order Limits (for a distance based on expert judgement and recognised guidance), plus roads on which traffic related to the Project would travel.
- 13.4.2 The Order Limits are shown in **Figure 13.1, Volume 5, Document 5.4.13** and have been used to inform the spatial scope of data gathering. The methodological approach to deciding upon the spatial extent of the Study Area for air quality has been informed by IAQM construction guidance¹⁹. The draft Order Limits upon which the assessment in the PEIR was based have been amended as the Project design has evolved since statutory consultation. However these amendments have not affected the scope of the data gathering as the Local Authority areas within which the Project falls have remained unchanged.
- 13.4.3 Construction activities associated with the Project would include construction of the cable sealing end compounds (CSEC) and substations, overhead line infrastructure, trench works associated with underground cabling (to connect CSECs) and construction access routes or haul roads and construction compounds.
- 13.4.4 The following criteria, included in IAQM construction guidance, has been taken into account to determine the air quality Study Area:
- A human receptor within:
 - 350m of the boundary of the construction working area considered; or
 - 50m of the route(s) used by construction vehicles on construction haulage routes, including the public highway, up to 500m from where the public highway meets the entrance(s) to the construction working area(s).
 - An ecological receptor within:
 - 50m of the boundary of the site considered; or
 - 50m of the route(s) used by construction vehicles on construction haulage routes, including the public highway, up to 500m from where the public highway meets the entrance(s) to the construction working area(s).
- 13.4.5 The Order Limits (see **Figure 13.1, Volume 5, Document 5.4.13**) incorporate the Limits of Deviation (further information on the Limits of Deviation is provided in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3**) and all land required to facilitate the works, including construction access routes and the alignment of new overhead lines and underground cables, in addition to the locations for the CSECS, new substations and construction compounds.
- 13.4.6 The Study Area for data gathering and assessment has focused on those geographical areas of the Project within the Order Limits where there could be substantial construction activities and temporary construction compounds. These comprise those sections of the Project where new infrastructure is proposed (see **Figure 13.1, Volume 5, Document 5.4.13**):
- Section B: North west of York Area: Works within this area would comprise the construction of new overhead lines and pylons, proposed Overton Substation, and

Shipton North and South CSECs, including the installation of underground cables work to connect the CSECs. In addition, within this area the existing 275kV Poppleton to Monk Fryston (XCP) overhead line would be largely dismantled and replaced with some sections realigned.

- Section D: Tadcaster Area: Works within this area would comprise the construction of Tadcaster Tee East and Tee West CSECs, including underground cabling to connect two existing overhead lines and pylon replacement work on XD0001.
- Section F: Monk Fryston Area: Works within this area would comprise the construction a new substation (proposed Monk Fryston Substation) and amendments to existing overhead lines which currently connect into the adjacent existing substation.

13.4.7 The areas within the Order Limits which fall outside the three areas listed above (Sections A, C and E) do not form part of the Study Area for air quality as the proposed construction works would be limited and comprise refurbishment works (existing 275kV Poppleton to Monk Fryston XC overhead line) or minor works mostly within National Grid’s operational land (Osbalwick Substation). It is worth noting that all construction compounds are included within the air quality Study Areas (Sections B, D and F). Further justification for scoping out these areas out of the assessment is provided in **Section 13.7**.

Desk study

13.4.8 A summary of the data sources, together with the nature of that data is outlined in **Table 13.6**. The desk study did not identify any relevant monitoring data to this assessment, which only covers dust deposition and ambient concentrations of PM₁₀, recorded by the relevant local authorities.

Table 13.6 – Data sources used to inform the air quality assessment

Organisation	Data source	Data provided
Hambleton District Council	2020 Air Quality Annual Status Report (ASR) ²⁵	Monitoring data.
Harrogate Borough Council	2021 Annual Status Report (ASR) ²⁶	Monitoring data.
Selby District Council	2021 Annual Status Report (ASR) ²⁷	Monitoring data.

²⁵ Hambleton District Council (2020). 2019 Air Quality Annual Status Report. (Online) Available at: <https://www.hambleton.gov.uk/downloads/download/111/air-quality-annual-status-reports> (Accessed 05 July 2022).

²⁶ Harrogate Borough Council (2020). 2020 Air Quality Annual Status Report. (Online) Available at: <https://www.harrogate.gov.uk/downloads/file/4217/air-quality-annual-status-report-2021> (Accessed 05 July 2022).

²⁷ Selby District Council (2021). 2020 Air Quality Annual Status Report. (Online) Available at: https://www.selby.gov.uk/sites/default/files/Documents/Selby%20DC%20ASR_Template_England_2021_v1.0%2002.06.2021.docx (Accessed 05 July 2022).

Organisation	Data source	Data provided
City of York Council	2021 Air Quality Annual Status Report (ASR) ²⁸ ;	Monitoring data.
Wakefield Metropolitan District Council	2021 Air Quality Annual Status Report (ASR) ²⁹	Monitoring data.
Ryedale District Council	2021 Air Quality Annual Status Report (ASR) ³⁰	Monitoring data.
Leeds City Council	2018 Annual Status Report (ASR) ³¹	Monitoring data.
Defra, UK Air Information Resource (UK-air)	Mapped estimates of background concentrations ³² ;	Monitoring data.
Defra's UK Air Information Resource (UK-Air)	Air Quality Management Area boundaries ³³ ;	Monitoring data.
Defra's MAGIC maps	Designated ecological sites ³⁴	Mapping.

Survey work

13.4.9 No survey work has been completed for the purposes of the assessment.

13.5 Overall baseline

Current baseline

Dust deposition

13.5.1 Ambient dust deposition rates are not monitored extensively in the UK. Monitoring that is undertaken is usually connected with specific activities such as mining and mineral extraction operations or specific large-scale construction programmes. Dust monitoring

²⁸ City of York Council (2020). 2020 Air Quality Annual Status Report. (Online) (Accessed 05 July 2022).

²⁹ Wakefield Metropolitan District Council (2021). 2020 Air Quality Annual Status Report. (Online) Available at: <https://www.wakefield.gov.uk/Documents/bins-environmental-environmental-health/pollution/2021%20Air%20Quality%20Annual%20Status%20Report%20%28ASR%29.pdf> (Accessed 05 July 2022).

³⁰ Ryedale District Council (2021). 2019 Air Quality Annual Status Report. (Online) Available at: <https://www.ryedale.gov.uk/content/uploads/2021/08/Ryedale-ASR-2021-2.pdf> (Accessed 05 July 2022).

³¹ Leeds City Council (2018). 2018 Air Quality Annual Status Report. (Online) (Accessed 05 July 2022).

³² Defra (2022). Background mapping data for local authorities. (Online) Available at: <https://uk-air.defra.gov.uk/data/laqm-background-home> (Accessed 05 July 2022).

³³ Defra (2022). Air Quality Management Areas interactive map. (Online) Available at: <https://uk-air.defra.gov.uk/aqma/maps/?t=635888318453327355> (Accessed 05 July 2022).

³⁴ Defra (2022). MAGIC. (Online) Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed on 05 July 2022).

may also be undertaken to investigate specific complaints received by local authorities, who are then required to investigate dust nuisance under the EPA 1990 (see **Table 13.1**).

Pollutant concentrations

- 13.5.2 The Study Areas for the Project fall within the jurisdictional areas of Hambleton District Council, Selby District Council, City of York Council, Harrogate Borough Council, and Leeds City Council. The AQMAs declared by the Local Authorities relate to nitrogen oxide (NO₂) and fall outside the Order Limits. As the assessment relates to construction dust effects, NO₂ monitoring is not considered relevant to this assessment.
- 13.5.3 Under LAQM duties, Local Authorities are required to monitor air quality concentrations. There are no monitoring locations of PM₁₀ within the Study Area. Therefore, background concentrations for PM₁₀ have been extracted from the Defra air pollution background maps, sourced from UK-AIR. The background concentrations represent 1km² grid squares, covering the study area. **Table 13.7** shows the estimated range of PM₁₀ levels across the Study Area.

Table 13.7 – Defra mapped annual mean background concentrations for 2022

Pollutant	Concentration Range within the Study Area (µg m⁻³)
PM ₁₀	13.0 – 14.7

Future baseline

- 13.5.4 A gradual decline in pollutants, as a result of expected improvements in air quality concentrations in future years is anticipated as demonstrated by the Defra air pollution background maps sourced from UK-AIR described above. These improvements are expected to result from measures such as the implementation of the Government’s Clean Air Strategy objectives, improvements in real world emissions performance of road vehicles, and more stringent emission limits for industrial sources. However, any improvements in air quality are not likely to be realised during the construction phase of the Project. It is therefore proposed that a conservative approach is employed for this assessment and hence any anticipated reductions are not accounted for.
- 13.5.5 With regard to the potential effects of climate change on the future air quality baseline, the 2007 report produced by the Air Quality Expert Group (AQEG)³⁵ indicated that the winter season may become windier with fewer less stable weather conditions by the end of the century, whilst summer seasons are anticipated to become hotter and sunnier, with an increase in unstable weather conditions by the 2040s. The net effect of these anticipated changes on the baseline air quality is difficult to establish but is unlikely to significantly alter the baseline air quality to an extent that it would affect the outcome of any assessment. Other factors such as changes in technology and the move away from combusting fossil fuels, driven by climate change abatement would potentially lead to decreases in emissions of the key pollutants considered in this assessment and a corresponding decrease in background concentrations of air pollutants into the future.

³⁵ Air Quality Expert Group (AQEG) (2007). Air Quality and Climate Change: A UK Perspective. (Online) Available at: <https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/fullreport.pdf> (Accessed 05 July 2022).

13.6 Embedded environmental measures

13.6.1 A range of environmental measures have been embedded into the Project (**Embedded environmental measures schedule, Appendix 3A, Volume 5, Document 5.3.3A**). **Table 13.8** outlines the embedded measures which have been taken into account in the air quality assessment.

Table 13.8 – Summary of the embedded environmental measures

Receptor	Potential changes and effects without embedded measures	Embedded measures	Compliance mechanism
Construction			
Human receptors within 350m and ecological receptors within 50m of the Order Limits	Increase in dust emissions and adverse effects on human and ecological receptors.	CoCP includes standard dust management measures (see Table 13.20).	CoCP secured via DCO requirement 5.

13.6.2 **Table 13.20** provides further detail on the required dust management measures in line with the IAQM's Guidance³⁶.

13.7 Scope of the assessment

Spatial scope

13.7.1 The spatial scope of the assessment covers Section B: North west of York Area, Section D: Tadcaster Area and Section F: Monk Fryston Area (see **Figure 13.1, Volume 5, Document 5.4.13**) of the Project contained within the Order Limits together with any receptors within 50m (ecological receptors) and 350m (human receptors) of the Order Limits or such receptors within 50m of any construction routes which would be needed to access these areas, as described in **Section 13.4**.

13.7.2 As outlined in **Section 13.4**, the proposed works falling outside the above areas (Sections A, C and E) comprise refurbishment activities on the section of the existing 275kV Poppleton to Monk Fryston XC overhead line within Sections C and E. Such activities would involve replacing conductors and fittings, strengthening pylon steelwork, work on the foundations of some pylons and installation of temporary access roads, which comprise the use of existing tracks or panel trackway with minor works to bellmouths and existing field gates. At Osbaldwick Substation, minor works (replacement of a gantry, minor works to an existing pylon and installation of a circuit breaker and associated cabling) are proposed mostly within operational land. As no substantial construction and earthwork activities are required and no construction compounds are proposed within these sections of the Project, taking into account the

³⁶ IAQM (2016). Guidance on the assessment of dust from demolition and construction. Version 1.1. Institute of Air Quality Management, London. (Online) Available at [REDACTED] (Accessed 05 July 2022).

proposed dust management measures which would be incorporated into the **CoCP, Volume 5, Document 5.3.3B**, dust effects from these elements of the Project have been scoped out of the assessment.

Temporal scope

- 13.7.3 The temporal scope of the assessment of air quality is consistent with the period over which the Project would be constructed and therefore covers the period, 2024-2028 for the construction phase.
- 13.7.4 No significant emissions to air are likely from the operational phase. Vehicle movements during the operational phase of the Project would be limited to occasional maintenance vehicles. At this stage of the Project the proposed new substations are not expected to be manned on a permanent basis and therefore the vehicles accessing these locations would also be limited. Therefore, operational traffic effects are scoped out of the assessment.
- 13.7.5 The Project is expected to have a life span of more than 80 years. If decommissioning is required at any future point in time, then activities and effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works, albeit with a shorter duration of two years. Therefore, the likely significance of effects relating to the construction phase assessment would be applicable to the decommissioning phase and decommissioning effects are not discussed further in this chapter.

Potential receptors

- 13.7.6 The principal air quality receptors that have been identified as being potentially subject to effects are summarised in **Table 13.9**.

Table 13.9 – Air quality receptors subject to potential effects

Receptor	Reason for consideration
Section B: Overton Wood Ancient Woodland	The woodland may be impacted by construction activities from the deposition of dust.
Section B: Individual properties and villages within and around North west of York Area, such as receptors around Corban Lane (North Hall Farm, Newlands Farm, Woodstock Lodge, Hall Moor), Overton Grange, New Farm, Thickpenny Farm and the villages of Skelton, Overton and Moor Monkton	Receptors may be impacted by construction activities from the deposition of dust and an increase in ground level concentrations of PM ₁₀ .
Section D: Individual properties located close to the works at Tadcaster, such as Brick House Farm and Lawnwith House as well as receptors within 50m of local roads which will be used to access this area (High Moor Grange Farm)	

Receptor	Reason for consideration
Section F: Receptors close to Monk Fryston such as Pollums House Farm and Monk Fryston Lodge	

Likely significant effects

- 13.7.7 Dust generated during the construction phase of the Project is assessed using the IAQM Guidance (see **Table 13.3**) to assess the dust risk and determine the appropriate dust management measures to be included in the **CoCP, Volume 5, Document 5.3.3B**. The construction phase dust assessment considers construction activities associated with the Project.
- 13.7.8 The effects scoped out from further assessment because the potential effects are not considered likely to be significant are outlined below.
- 13.7.9 Effects of pollutant emissions from construction vehicles on both human and ecological receptors are scoped out of the assessment based on the review of the construction traffic flows. Although the scoping opinion from the Planning Inspectorate confirmed that construction traffic effects could be scoped out of the assessment, and no further comments on effects on air quality from traffic flows associated with the Project were received as part of the statutory consultation, Hambleton District Council has since identified that there are potential impacts on local air quality from current traffic flows travelling through Shipton on the A19. Initial air quality monitoring on this stretch of road has commenced. Hambleton District Council is looking to put in place additional monitoring from September 2022. Data will become available in 2023.
- 13.7.10 The traffic modelling (**Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12**) indicates that the increase in Heavy Duty Vehicle (HDVs) on the A19 through Shipton during the peak periods of the Project would be 16 HDVs over a 24 hour period. This would be below the IAQM screening threshold for a detailed assessment for traffic flows through an AQMA (25 AADT), which has been considered as a worst-case assumption should an AQMA be declared in Shipton. Furthermore, the increase in HDV traffic would be lower outside the peak periods of construction and be temporary. Therefore significant effects from traffic flows through Shipton are unlikely and scoped-out of the assessment. However this will be kept under review throughout the examination phase of the DCO and an updated assessment undertaken, if needed once the air quality monitoring data becomes available.
- 13.7.11 **Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12** identifies 25 road links (including the A19 through Shipton) on the highway with anticipated increases in traffic flows as a result of construction traffic. For most of these road links, including traffic through Shipton, peak construction 24hr traffic flows are below the screening criteria provided by IAQM (see **Table 13.10**). Only two highway links would experience an increase of more than 100 HDVs during peak periods (the IAQM screening criterion outside of an AQMA being more than 100 HDVs in terms of Annual Average Daily Traffic (AADT) traffic flows).
- 13.7.12 This would occur on the A64 (between Paradise Lane and the A659) and sections of the A1327 between the A64 and the A19 (refer to Links 3, 5 and 9 on **Figure 12.7, Volume 5, Document 5.4.12**). The increase in HDV flows from construction traffic would be temporary and the predicted exceedances of the screening criteria relate to peak traffic flows, whereas IAQM criteria refer to annual average traffic flows. Therefore, the HDV

AAADT across the 25 road links would be lower than the reported peak and below the HDV screening criterion (100 AADT flows outside of AQMAs). Therefore, it is concluded that impacts would be negligible, and no detailed assessment of construction traffic emissions has been undertaken as agreed with consultees (see **Table 13.4**).

13.7.13 As outlined above, day-to-day operational vehicle movements are expected to be minimal and therefore effects from operational vehicle emissions are scoped out of the assessment. During the estimated 80 year life span of the Project, there may be a requirement to refurbish the new overhead lines constructed as part of the Project. For the purposes of the assessment, based on NG experience of similar projects, it is assumed that vehicle movements associated with these works would be 25% of the flows estimated for the construction phase and therefore, as it is concluded that construction traffic flows are not likely to result in significant air quality effects, the same is concluded regarding any traffic movements associated with refurbishment works during the life span of the Project. Effects from NRMM are scoped out from further assessment as the scale, duration, and distance of construction activity to relevant receptors are not considered to be of a magnitude that would result in significant effects. Construction plant will only be temporary and in most cases for much shorter durations than a calendar year. Details of assumptions are provided in **Appendix 14B: Construction plant and activity assumptions (Volume 5, Document 5.3.14B)** accompanying **Chapter 14: Noise and vibration (Volume 5, Document 5.2.14)**.

Table 13.10 -Screening criteria for detailed air quality assessment of road traffic emissions

Nature of Impact	Screening criteria for Detailed Air Quality Assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors (LDV = cars and small vans <3.5t gross vehicle weight).	A change of LDV flows of: <ul style="list-style-type: none"> • more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA; or • more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: <ul style="list-style-type: none"> • more than 25 AADT within or adjacent to an AQMA; or • more than 100 AADT elsewhere.
Realign roads, i.e. changing the proximity of receptors to traffic lanes.	Where the change is 5m or more and the road is within an AQMA.
Introduce a new junction or remove an existing junction near to relevant receptors.	The introduction of a new junction or removal of a junction will lead to a detailed air quality assessment when this addition or removal causes traffic to significantly change vehicle acceleration or deceleration, for example, traffic lights, or roundabouts.
Introduce or change a bus station.	Where bus flows will change by: <ul style="list-style-type: none"> • more than 25 AADT within or adjacent to an AQMA; or • more than 100 AADT elsewhere.

Note: Taken from IAQM guidance Land-Use Planning and Development Control: Planning for Air Quality (2017)²⁰.

13.8 Assessment methodology

- 13.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Approach to Preparing the ES, Volume 5, Document 5.2.4**. However, for the purpose of this assessment the IAQM construction guidance¹⁹ methodology has been applied.
- 13.8.2 The significance of dust effects is based on professional judgement after establishing the dust risk for the Project using the IAQM construction guidance¹⁹. The IAQM dust assessment methodology starts with the assumption that there would be no dust mitigation measures. It should be noted that this approach is used for dust assessment only in this ES in line with the IAQM Guidance. The resulting level of risk is then used to determine the level of environmental measures required to ensure that actual effects are not significant.
- 13.8.3 The guidance provides a four-step process for evaluating the risk associated with dust emissions from construction and demolition sites on different types of receptors to dust

soiling, health effects (from emissions of PM₁₀) and ecological effects. After screening to determine if a detailed assessment is required (step 1), this level of risk is determined separately for each of the four construction activities (demolition³⁷; earthworks; construction; and trackout) defined in the guidance.

- 13.8.4 Step 2 takes account of the scale and nature of the works, which determines the potential dust emission magnitude (classified as large, medium or small), and the sensitivity of the area (classified as high, medium or low) which is determined by how many receptors there are, and how sensitive the receptors are, at various distances from the source. The risk of impacts in the absence of mitigation (classified as high risk, medium risk, low risk or negligible risk) is determined by combining the dust emission magnitude with the sensitivity of the area.
- 13.8.5 Step 3 determines the site-specific mitigation for each of the activities using the recommended measures in the guidance. Step 4 is to examine the residual effects and determine the overall significance of dust effects. In respect to the latter, the guidance states:

“For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be ‘not significant’.

There may be cases where, for example, there is inadequate access to water for dust suppression to be effective, and even with other mitigation measures in place there may be a significant effect. Therefore, it is important to consider the specific characteristics of the site and the surrounding area to ensure that the conclusion of no significant effect is robust.”

- 13.8.6 Further information is provided in **Appendix 13A, Volume 5, Document 5.3.13**.

13.9 Assessment of construction dust effects

Section B: North west of York Area

Magnitude of impacts

- 13.9.1 In relation to the four activity types, the magnitude of effects is as follows.
- Demolition works (refers to dismantling activities in the context of this Project): The volume of material from the overhead line dismantling works is estimated to be below 20,000m³ (small magnitude of effect), however the pylons to be dismantled exceed 20m in height (large magnitude of effect). The IAQM construction guidance considers works at height more in relation to building demolition than dismantling of pylons. As a result, the magnitude of effect is considered to be **medium**.
 - Earthworks: The working area for the North west of York Area would exceed 10,000 m² (large magnitude of effect). It is expected that earthworks would generate in excess of 100,000 tonnes of material in this area. As a result, it is considered that the magnitude of dust emissions would be **large**.

³⁷ For the purposes of this assessment works involving the dismantling of existing pylons has been considered in the category of demolition activities

- Construction: The total volume of materials at the construction and reinstatement phases is estimated to be between of 25,000 – 100,000m³. It is therefore considered that there would be a **medium** dust emission magnitude for construction activities.
- Trackout: Dust emissions may occur on the public road network as a result of Project related HGVs depositing material which is subsequently re-suspended by other vehicles. The total number of daily HGV movements is estimated, on average, to be between 10 and 50 HGVs for each of the access points (the locations where traffic would enter the works within the Order Limits from the public highway) within the North west of York Area during peak construction period (see **Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12**). It is therefore considered that, taking into account the distribution of the access points across the North West of York Area, the magnitude of dust emissions would be **medium**.

13.9.2 The magnitude of impacts from the above four activities is summarised in **Table 13.11**.

Table 13.11 – Dust emission magnitude: North west of York Area

Source	Dust Emission Magnitude
Demolition	Medium
Earthworks	Large
Construction	Medium
Trackout	Medium

Sensitivity of receptors

13.9.3 The sensitivity of the area is defined by determining the number of receptors using a set of distance criteria (20m, 50m, 100m and 350m) from the IAQM construction guidance. There are no residential receptors within 20m of the Order Limits. There are fewer than five residential receptors within 50m and fewer than 100 residential properties within 100m of the Order Limits in Section B: North west of York Area which are classified as high sensitivity receptors. The sensitivity of the area (using Table 2 of the IAQM construction guidance, see **Table 13.3**) with respect to dust soiling effects on people and property in relation to demolition, earthworks and construction activities, is therefore considered to be **low**.

13.9.4 Access to the North west of York Area would be via temporary access points from the A19; Overton Road, Corban Lane, Plainville Lane, Stripe Lane, Common Croft Lane and Redhouse Lane. Each of these accesses has a number of properties which are located within 20m of the road and 500m of the temporary access point, as follows:

- A19: 4 properties;
- Overton Road: 6 properties;
- Corban Lane: 1 property;
- Plainville Lane: 11 properties;
- Stripe Lane: 11 properties;
- Common Croft Lane: 2 properties; and

- Redhouse Lane: 12 properties.

13.9.5 Hence, the sensitivity of the area with respect to dust soiling effects on people and property in relation to trackout is considered to be **high**.

13.9.6 The estimated maximum background PM₁₀ concentration at North west of York Area (Section B) is below 24 µgm⁻³. Given that there are fewer than 100 residential properties located within 20m of the Order Limits for Section B: North west of York Area, the sensitivity of the area assessed using Table 3 of IAQM construction guidance (see **Table 13.3**) with respect to human health impact, is **low**.

13.9.7 The Overton Wood is 15m from the Order Limits for the North west of York Area. As the woodland is considered a low sensitivity receptor, according to the IAQM construction guidance¹⁹, the sensitivity of the area assessed using Table 4 of IAQM construction guidance with respect to ecological impact is **low**.

13.9.8 The sensitivity of the surrounding area is summarised in **Table 13.12**.

Table 13.12 – Sensitivity of the North west of York Area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	High
Human Health	Low	Low	Low	Low
Ecological	Low	Low	Low	Low

Risk categorisation of dust impacts

13.9.9 The risk of dust impacts is defined using Tables 7, 8 and 9 in the IAQM construction guidance¹⁹ for earthworks, construction and removal of materials trackout, respectively. The dust emission magnitude classes combined with the sensitivity of surrounding area classes, result in the risk categories shown in **Table 13.13**.

Table 13.13 – North west of York Area construction dust assessment summary

Potential impact	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low Risk	Low Risk	Low Risk	Medium Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk
Ecological	Low Risk	Low Risk	Low Risk	Low Risk

Significance of effects

13.9.10 The finding that without dust controls, there would be a medium risk of impact has informed the dust management measures that would be implemented as part of the Project (see **Table 13.20**). Such measures are expected to ensure that the risk of impact is reduced to negligible. Therefore, the effect of dust emissions during the construction phase would be negligible and **Not Significant**.

13.9.11 There are no predicted permanent or long-term impacts, so the effect would remain as negligible in the long-term.

Section D: Tadcaster Area

Magnitude of impacts

13.9.12 In relation to the four activity types, the magnitude of effects is as follows.

- Demolition works (refers to dismantling activities in the context of this Project): The volume of material from the overhead line dismantling works is estimated to be below 20,000m³ (small magnitude of effect), however the pylons to be dismantled exceed 20m in height (large magnitude of effect). The IAQM construction guidance considers works at height more in relation to building demolition than dismantling of pylons. As a result, the magnitude of effect is considered to be **medium**.
- Earthworks: The working area for construction and reinstatement would exceed 10,000 m². In addition, the total volume of earthworks material that would need to be moved in this area would be above 100,000 tonnes. As a result, it is considered that the magnitude of dust emissions would be **large**.
- Construction: The total volume of construction materials at the construction and reinstatement stage is estimated to be between 25,000 – 100,000 m³. It is therefore considered that the magnitude of dust emissions would be **medium**.
- Trackout: Dust emissions may occur from the transport of dust and dirt from the construction site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. The total number of daily HGV movements is estimated to be within the IAQM criteria of 10-50 HGV for each of the access points within the Tadcaster Area during peak construction periods. It is therefore considered that, taking into account the distribution of the access points across the Tadcaster Area, the magnitude of dust emissions associated with trackout would be **medium**.

13.9.13 The magnitude of impacts from the above activities is summarised in **Table 13.14**.

Table 13.14 – Dust emission magnitude in the Tadcaster Area

Source	Dust Emission Magnitude
Demolition	Medium
Earthworks	Large
Construction	Medium
Trackout	Medium

Sensitivity of receptors

13.9.14 There is one receptor within 20m of the Order Limits for Section D: Tadcaster Area and one residential property within 50m, both of which are classed as a high sensitivity receptors. The sensitivity of the area is therefore considered to be **low**.

- 13.9.15 These two residential properties are also within 50m of Garnet Lane which would be used by construction traffic. The sensitivity of the area with respect to dust soiling effects on people and property in relation to trackout using the temporary access is therefore considered to be **low**.
- 13.9.16 The estimated maximum background PM₁₀ at the Tadcaster site is below 24 µgm⁻³. Given that there are less than 100 residential properties located within 20m of the Order Limits, the sensitivity of the area with respect to human health impact is low.
- 13.9.17 There are no ecological sites located within 350m of the Tadcaster Site. There are also no ecological sites within 50m of construction traffic routes, up to 500m from where the temporary access joins the public highway. The sensitivity of the area with respect to dust soiling effects on ecological receptors has not been considered further.
- 13.9.18 The sensitivity of the surrounding area is summarised in **Table 13.15**.

Table 13.15 – Sensitivity of the area at Tadcaster site

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	Low
Human Health	Low	Low	Low	Low

Risk categorisation of dust impacts

- 13.9.19 The risk of dust impacts is defined using Tables 7, 8 and 9 in the IAQM construction guidance for earthworks, construction and removal of materials trackout¹⁹, respectively. The dust emission magnitude classes combined with the sensitivity of surrounding area classes, result in the risk categories reported in **Table 13.16**.

Table 13.16 – Tadcaster area construction dust assessment summary

Potential Impact	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low Risk	Low Risk	Low Risk	Low Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk

Significance of effects

- 13.9.20 The finding that without dust controls there would be a low risk of impact has informed the dust management measures that would be implemented as part of the Project (**Table 13.20**) and these measures¹⁹ are expected to ensure that the risk of impact is reduced to negligible. The effect of dust emissions during the construction phase would be negligible with applied site-specific mitigations and the impact is considered to be **Not Significant**.
- 13.9.21 There are no predicted permanent or long-term impacts, so the effect would remain as negligible in the long-term.

Section F: Monk Fryston Area

Magnitude of impacts

13.9.22 In relation to the four activity types, the magnitude of effects is as follows.

- Demolition: The volume of material from the overhead line dismantling works is estimated to be less 20,000 m³, (small magnitude of effect), however pylons to be removed exceed 20m in height. Although the IAQM construction guidance considers works at height more in relation to building demolition, as a worst-case a large magnitude of effect is assumed. Therefore, it is considered that the magnitude of effect would be **medium**.
- Earthworks: The working area for construction and reinstatement would exceed 10,000 m² (large magnitude of effect). In addition, it is expected that the earthworks required to construct the proposed Monk Fryston Substation would generate in excess of 100,000 tonnes of material (large magnitude of effect). As a result, it is considered that the magnitude of dust emissions would be **large**.
- Construction: The total volume of construction materials during the construction and reinstatement phases is estimated to be between 25,000 – 100,000 m³. It is therefore considered that the magnitude of effect would be **medium**.
- Trackout: Dust emissions may occur on the public road network as a result of Project related HGVs depositing material which is subsequently re-suspended by other vehicles. The total number of daily HGV movements is estimated to fall within the IAQM criteria of greater than 50 HGVs during the peak construction period for each of the access points within the Order Limits within the Monk Fryston Area (see **Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12**). It is therefore considered that the magnitude of dust emissions associated with trackout would be **large**.

13.9.23 The magnitude of impacts from the above activities is summarised in **Table 13.17**.

Table 13.17 – Dust emission magnitude at Monk Fryston site

Source	Dust Emission Magnitude
Demolition	Medium
Earthworks	Large
Construction	Medium
Trackout	Large

Sensitivity of receptors

13.9.24 There are ten residential properties within 20m of the Order Limits for Section F: the Monk Fryston Area. There are also a number of caravans (estimated to be fewer than 30 caravans) within and up to 20m of the Order Limits. The sensitivity of the area assessed using Table 2 of the IAQM guidance (see **Table 13.3**) with respect to dust soiling effects on people and property in relation to demolition, earthworks and construction activities is therefore considered to be **high**.

13.9.25 There are two residential properties and fewer than 30 caravans within 50m of the site haul route 500m from the access point that would be used by construction traffic to access the proposed works at Monk Fryston. The sensitivity of the area with respect to dust soiling effects on people and property in relation to trackout using the construction access is therefore considered to be **medium**.

13.9.26 The estimated maximum background PM₁₀ concentration (see **Table 13.7**) at the existing Monk Fryston Substation is below 24 µgm⁻³⁹. Given that there are less than 100 residential properties and caravans located within 20m from the Area, the sensitivity of the area with respect to human health impact is **low**.

13.9.27 There are no ecological sites located within 350m of the existing Monk Fryston Substation. In addition, there are no ecological sites within 50m of construction traffic routes up to 500m from where the access points join the public highway. Therefore, the sensitivity of the area with respect to dust soiling effects on ecological receptors has not been considered further.

13.9.28 The sensitivity of the surrounding area is summarised in **Table 13.18**.

Table 13.18 – Sensitivity of the Area at the existing Monk Fryston Substation

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	Medium
Human Health	Low	Low	Low	Low

Risk categorisation of dust impacts

13.9.29 The risk of dust impacts is defined using Tables 7, 8 and 9 in the guidance for earthworks, construction and removal of materials trackout, respectively¹⁹. The dust emission magnitude classes combined with the sensitivity of surrounding area classes, result in the risk categories shown in **Table 13.19**.

Table 13.19 – Monk Fryston Area construction dust assessment summary

Potential Impact	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	High Risk	Medium Risk	Medium Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk

Significance of effects

13.9.30 The finding that without dust controls there would be a high risk of impact has informed the dust management measures that would be implemented as part of the Project (**Table 13.20**) and these measures are expected to ensure that the risk of impact is reduced to negligible levels. The effect of the construction phase through dust

emissions would be negligible with applied site-specific mitigations and the impact is considered to be **Not Significant** in terms of the EIA Regulations³⁸.

13.9.31 There are no predicted permanent or long-term impacts, so the effect would be negligible in the long-term.

Required dust management measures

13.9.32 **Table 13.21** lists the IAQM measures (see **Table 13.3**) for dust effects that will be implemented as part of the Project. These measures will form part of the **CoCP, Volume 5, Document 5.3.3B** which will cover all works within the Order Limits and provide further information on the locations where the measures listed in **Table 13.20** are required. A CoCP will be submitted in support of the DCO application.

Table 13.20 – Required management measures

Measures
Monitoring
Carry out regular site inspections to monitor compliance with the dust management measures set out in the CoCP, record inspection results, and make an inspection log available to the relevant Local Authority when asked. This should include regular dust soiling checks of surfaces such as street furniture.
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when construction activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
Consider the need for dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the relevant Local Authority through the Pollution Incident Control Plan (secured in Requirement 6 of the draft DCO, Volume 3, Document 3.1)
Operating Vehicle/Machinery and Sustainable Travel
Ensure all vehicles switch off engines when stationary - no idling vehicles.
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
Comply with measures set out in the Construction Traffic Management Plan (Volume 5, Document 5.3.3F) to manage the sustainable delivery of goods and materials.
Adhere to maximum speed limits imposed during the construction phase on all temporary and permanent access roads (as opposed to public/private roads with existing speed limits in place) (see Section 13.3 of this document).
Comply with measures set out in the Construction Traffic Management Plan (Volume 5, Document 5.3.3F) supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
Dust Management measures

³⁸ UK Government (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. (Online) Available at: <https://www.legislation.gov.uk/ukxi/2017/572/contents> (Accessed 25 October 2022).

Measures

Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, for example, suitable local exhaust ventilation systems.

Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.

Use enclosed chutes and conveyors and covered skips.

Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.

Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using appropriate cleaning methods.

Preparing and Maintaining the Site

Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

Consider the use of solid screens or barriers around dusty construction activities in areas where construction works are within 100m sensitive receptors.

Avoid site runoff of water or mud.

Keep site fencing, barriers and scaffolding clean to avoid the transfer of dust when these elements are transported.

Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.

Comply with the outline Soil Management Plan (**secured in Requirement 5, Draft DCO, Volume 3, Document 3.1**) in relation to the covering, seeding or fencing of stockpiles to prevent wind whipping as soon as it is practical.

Site Management

Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.

Make the complaints log available to the local authority when asked.

Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.

Waste Management

No bonfires and burning of waste materials.

Measures specific to Dismantling

Ensure effective water suppression is used during dismantling. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.

Measures

Bag and remove any biological debris or damp down such material before dismantling takes place.

Measures specific for Earthwork

Comply with measures set out in the Outline Soil Management Plan (OSMP) to minimise the risk of dust from earthworks (**Volume 5, Document 5.3.3E, Appendix 3E**).

Measures specific for Construction materials

Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Avoid scabbling (roughening of concrete surfaces) if possible.

Ensure bulk cement and other fine powder materials are 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, ensure bags are sealed after use and stored appropriately to prevent dust.

Measures specific for Trackout

Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.

Avoid dry sweeping of large areas.

Ensure vehicles carrying materials which may produce dust entering and leaving sites are covered to prevent escape of materials during transport.

Inspect temporary access roads as required for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.

Record all inspections of temporary access roads and any subsequent action in a site logbook.

Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site) at appropriate locations and where reasonably practicable.

Ensure there is an adequate area of hard standing within construction compounds between the wheel wash facility and the site exit, wherever site size and layout permits.

13.10 Assessment of cumulative effects

Inter-project (combined with other development) cumulative effects

13.10.1 An assessment of the effects which could result from the Project in cumulation with other developments in the vicinity of the Project is provided in **Chapter 18: Cumulative Effects Assessment (Volume 5, Document 5.2.18)**.

Intra-project (within the Project) cumulative effects

13.10.2 Intra-project effects have been considered in this assessment, i.e. where effects in one environmental area could give rise to effects in others. The greatest potential for construction dust effects that are inter-related with other aspects is considered to be with hydrology and biodiversity (**Chapters 8 and 9, Volume 5, Documents 5.2.8 and 5.2.9, Volume 5**). A summary of the intra-project cumulative effects by receptor is provided in **Chapter 18, Volume 5, Document 5.2.18**.

13.10.3 There are potential inter-related effects relating to construction dust as follows:

- indirect effects on biodiversity receptors, in particularly statutory and non-statutory designated nature conservation sites up to 50m from the Order Limits. This provides a potential inter-related effect with biodiversity receptors that is discussed in **Chapter 8, Volume 5, Document 5.2.8**; and
- indirect effects and contamination to surface water. This provides a potential inter-related effect with surface water quality receptors that is discussed in **Chapter 9, Volume 5, Document 5.2.9**.

13.11 Significance conclusions

13.11.1 A summary of the results of the air quality assessment is provided in **Table 13.21**.

Table 13.21 – Summary of significance of effects

Receptor and Summary of Predicted Effects	Sensitivity/ importance/ value of receptor¹	Magnitude of change²	Significance³	Summary Rationale
Residential receptors (within 350m of North west of York Area, Tadcaster Area and the existing Monk Fryston Substation Order Limits/50m from construction routes within 500m of North West of York Area, Tadcaster Area and the existing Monk Fryston Substation entrance) Predicted effect: Increased dust emissions during the construction phase.	High	Medium – Large	Not significant (Low risk prior to embedded mitigation).	Implementation of a CoCP including the required management measures detailed in Table 13.20 .
Biodiversity sites (within 50m of North west of York Area, Tadcaster Area and the existing Monk Fryston Substation boundary/50m from construction routes within 500m of North West of York Area, Tadcaster	Low	Negligible	Not significant	Implementation of a CoCP including the required management measures detailed in Table 13.20 .

Receptor and Summary of Predicted Effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary Rationale
<p>Area and the existing Monk Fryston Substation entrance)</p> <p>Predicted effect: Increased dust emissions during the construction period.</p>				
<ol style="list-style-type: none"> 1. The sensitivity/importance/value of a receptor is defined using the criteria set out in IAQM construction guidance and is defined as low, medium, high. 2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in the IAQM construction guidance and is defined negligible, small, medium and large and are presented in Appendix 13A, Volume 5, Document 5.4.13A. 3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in the IAQM construction guidance and are presented in Appendix 13A, Volume 5, Document 5.4.13A. 				

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