



Pearmtree Hill Solar Farm

Environmental Statement

Volume 4

Appendix 6.1: Air Quality Assessment

Revision 2

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Planning Act 2008
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1 THE PROPOSED DEVELOPMENT

Introduction

- 1.1 Peartree Hill Solar Farm comprises the construction, operation (including maintenance) and decommissioning of a solar photovoltaic (PV) electricity generating and storage facility with an export capacity of up to 320 megawatts (MW) and associated infrastructure (hereafter the 'Proposed Development'), as described within **ES Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]** and **Schedule 1** of the **Draft DCO [EN010157/APP/3.1]**.
- 1.2 This assessment presents the likely significant effects arising from the Proposed Development upon air quality. An air quality Environmental Statement (ES) chapter (**ES Volume 2, Chapter 6: Air Quality [EN010157/APP/6.2]**) has been prepared based on this assessment. The full description of the Proposed Development is provided within **ES Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]**.

2 THE ORDER LIMITS AND SURROUNDINGS

- 2.1 The Proposed Development encompasses an area of approximately 891 hectares (ha) within East Riding of Yorkshire (the 'Site') as shown on the **Location and Land Area Plan [EN010157/APP/2.1]**. The boundary of the Site is hereafter referred as the 'Order Limits'.
- 2.2 The Order Limits contain five areas of land (Land Areas B-F), interconnecting underground cables between the Land Areas, a 132 kilovolt (kV) underground cable route to National Grid Creyke Beck Substation, and sections of highway land.

3 LEGISLATION FRAMEWORK, PLANNING POLICY AND GUIDANCE

Legislation

Air quality standards

- 3.1 The Air Quality Standards in the UK are derived from European Commission directives and are adopted into English law via the Air Quality (England) Regulations 2000 [Ref. 1] and Air Quality (England) Amendment Regulations 2002 [Ref. 2]. The Air Quality Limit Values Regulations 2003 [Ref. 3] and subsequent amendments implement the Air Quality Framework Directive into English Law. Directive 2008/50/EC [Ref. 4] was translated into UK law in 2010 via the Air Quality Standards Regulations 2010 [Ref. 5]. The Air Quality Standards Regulations 2016 [Ref. 6] amend the Air Quality Standards Regulations 2010 [Ref. 5] in 2016.
- 3.2 The relevant air quality standards to England and Wales to protect human health are summarised in **Table 3.1**.

Table 3.1: Air quality standards relevant to the Proposed Development

Substance	Averaging period	Exceedances allowed per year	Ground level concentration limit ($\mu\text{g}/\text{m}^3$)
Nitrogen dioxide (NO_2)	1 calendar year	-	40
	1 hour	18	200
Fine particles (PM_{10})	1 calendar year	-	40
	24 hours	35	50
Fine particles ($\text{PM}_{2.5}$)	1 calendar year	-	20

The Environment Act 1995

- 3.3 These objectives are to be used in the review and assessment of air quality by local authorities under Section 82 of the Environment Act 1995 [Ref. 7]. If exceedances are measured or predicted through the review and assessment process, the local authority must declare an Air Quality Management Area under Section 83 of the Act and must produce an Air Quality Action Plan to outline how air quality is to be improved.

The Environment Act 2021

- 3.4 The Environment Act 2021 [Ref. 8] amends the Environment Act 1995 [Ref. 7] to establish the use of local air quality management framework, in order to encourage cooperation at the local level and broaden the range of organisations that play a role in improving local air quality. Part 1 of The Environment Act requires targets to be set for fine particulate matter PM_{2.5}, and these were introduced in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 [Ref. 9], as follows:
- PM_{2.5} concentration interim target, annual mean of 12µg/m³ by 2028;
 - PM_{2.5} exposure reduction interim target of 22% reduction compared to 2018 by 2028;
 - PM_{2.5} concentration binding target of annual mean of 10µg/m³ by 2040;
 - PM_{2.5} exposure reduction binding target of 35% reduction compared to 2018 by 2040.

Planning policy

- 3.5 The land use planning process is a key means of improving air quality, particularly in the long term, through the strategic location and design of new developments. Any air quality concern that relates to land use and its development can, depending on the details of the Proposed Development, be a material consideration in the determination of planning applications.

Overarching National Policy Statement for Energy (NPS EN-1) (designated in January 2024)

- 3.6 Section 5.2 of the NPS EN-1 [Ref. 10] details the planning policy for air quality, including guidance on undertaking the Environmental Impact Assessment (EIA).
- 3.7 Paragraph 5.2.8 states that: *‘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.’*
- 3.8 Paragraph 5.2.9 states that: *‘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.’*

- 3.9 Paragraph 5.2.10 states that: *“In addition, applicants should consider the Environment Targets (Fine Particulate Matter) (England) Regulations 2022 and associated Defra guidance.”*
- 3.10 Paragraph 5.2.11 states that: *“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.”*
- 3.11 Paragraph 5.2.12 states that: *“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 noncompliant 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.”*
- 3.12 Paragraph 5.2.13 states that: *“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.”*
- 3.13 Paragraph 5.2.14 states that: *“The mitigations identified in Section 5.14 on traffic and transport impacts will help mitigate the effects of air emissions from transport.”*
- 3.14 Paragraph 5.2.15 states that: *“Many activities involving air emissions are subject to pollution control. The considerations set out in Section 4.12 on the interface between planning and pollution control therefore apply. The Secretary of State must also consider duties under other legislation including duties under the Environment Act 2021 in relation to environmental targets and have regard to policies set out in the Government’s Environmental Improvement Plan 2023.”*
- 3.15 Paragraph 5.2.16 states that: *“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.”*

- 3.16 Paragraph 5.2.17 states that: *“The Secretary of State should give air quality considerations substantial weight where a project is proposed near a sensitive receptor site, such as an education or healthcare facility, residential use or a sensitive or protected habitat.”*
- 3.17 Paragraph 5.2.18 states that: *“Where a project is proposed near to a sensitive receptor site for air quality, if the applicant cannot provide justification for this location, and a suitable mitigation plan, the Secretary of State should refuse consent.”*
- 3.18 Paragraph 5.2.19 states that: *“In all cases, the Secretary of State must take account of any relevant statutory air quality limits, objectives and targets. If a project will lead to non-compliance with a statutory limit, objective or target the Secretary of State should refuse consent.”*
- 3.19 Section 5.7 of the NPS EN-1 **[Ref. 10]** details the planning policy for dust.
- 3.20 Paragraph 5.7.5 states that: *“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.”*
- 3.21 Paragraph 5.7.6 states that: *“In particular, the assessment provided by the applicant should describe:*
- *the type, quantity and timing of emissions*
 - *aspects of the development which may give rise to emissions*
 - *premises or locations that may be affected by the emissions*
 - *effects of the emission on identified premises or locations*
 - *measures to be employed in preventing or mitigating the emissions.”*
- 3.22 Paragraph 5.7.7 states that: *“The applicant is advised to consult the relevant local planning authority and, where appropriate, the EA about the scope and methodology of the assessment.”*
- 3.23 Paragraph 5.7.8 states that: *“Mitigation measures may include one or more of the following:*
- *engineering: prevention of a specific emission at the point of generation; control, containment and abatement of emissions if generated*
 - *lay-out: adequate distance between source and sensitive receptors; reduced transport or handling of material*
 - *administrative: limiting operating times; restricting activities allowed on the site; implementing management plans.”*
- 3.24 Paragraph 5.7.9 states that: *“Construction should be undertaken in a way that reduces emissions, for example the use of low emission mobile plant during the construction, and demolition phases as appropriate, and consideration should be given to making these mandatory in Development Consent Order requirements.”*

- 3.25 Paragraph 5.7.10 states that: *“Demolition considerations should be embedded into designs at the outset to enable demolition techniques to be adopted that remove the need for explosive demolition.”*
- 3.26 Paragraph 5.7.11 states that: *“A construction management plan may help clarify and secure mitigation.”*
- 3.27 Paragraph 5.7.12 states that: *“The Secretary of State should satisfy itself that:*
- *an assessment of the potential for artificial light, dust, odour, smoke, steam and insect infestation to have a detrimental impact on amenity has been carried out*
 - *that all reasonable steps have been taken, and will be taken, to minimise any such detrimental impacts.”*

National Planning Policy Framework

- 3.28 In December 2024, the revised National Planning Policy Framework [Ref. 11] was published, superseding the previous September 2023 and December 2023 National Planning Policy Framework with immediate effect. The National Planning Policy Framework includes a presumption in favour of sustainable development.
- 3.29 Section 2 of the National Planning Policy Framework deals with Achieving Sustainable Development and paragraph 8 states that *“Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):*
- a) ***an economic objective*** – *to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;*
 - b) ***a social objective*** – *to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and*
 - c) ***an environmental objective*** – *to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”*

- 3.30 Section 15 of the National Planning Policy Framework deals with Conserving and Enhancing the Natural Environment, and paragraph 187 states that the intention is that the planning system should prevent “*new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. Development should wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.*”
- 3.31 With specific regard to air quality, paragraph 199 of the National Planning Policy Framework states that “*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.*”

East Riding Local Plan 2012 - 2029 (adopted April 2016)

- 3.32 East Riding Yorkshire Council policies for managing developments are laid out in the East Riding Local Plan [Ref. 12] which include East Riding Yorkshire Council policies relating to air quality. Policy EC5 Supporting the Energy Sector states the following:
- ‘A. Proposals for the development of the energy sector, excluding wind energy but including the other types of development listed in Table 7, will be supported where any significant adverse impacts are addressed satisfactorily and the residual harm is outweighed by the wider benefits of the proposal. Developments and their associated infrastructure should be acceptable in terms of:*
- 1. The cumulative impact of the proposal with other existing and proposed energy sector developments;*
 - 2. The character and sensitivity of landscapes to accommodate energy development, with particular consideration to the identified Important Landscape Areas, as shown on Figure 11;*
 - 3. The effects of development on:*
 - i. local amenity, including noise, air and water quality, traffic, vibration, dust and visual impact;*
 - ii. biodiversity, geodiversity and nature, particularly in relation to designations, displacement, disturbance and collision and the impact of emissions/contamination;*

- iii. *the historic environment, including individual and groups of heritage assets above and below ground;*
- iv. *telecommunications and other networks; including the need for additional cabling to connect to the National Grid, electromagnetic production and interference, and aeronautical impacts such as on radar systems;*
- v. *transport, including the opportunity to use waterways and rail for transportation of materials and fuel, and the capacity of the road network to accommodate development;*
- vi. *increasing the risk of flooding; and*
- vii. *the land, including land stability, contamination and soil resources.*

B. Where appropriate, proposals should include provision for decommissioning at the end of their operational life. Where decommissioning is necessary, the site should be restored, with minimal adverse impact on amenity, landscape and biodiversity, and opportunities taken for enhancement of these features.

.....’

Guidance

Air quality strategy

- 3.33 United Kingdom (UK) air quality policy is published under the umbrella of the Environment Act 1995 [Ref. 7], Part IV and specifically Section 80, the National Air Quality Strategy. The latest *Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working Together for Clean Air*, published in July 2007 [Ref. 13, 14] sets air quality standards and objectives for ten key air pollutants to be achieved between 2003 and 2020.
- 3.34 The Clean Air Strategy 2019 [Ref. 15] supersedes the policies outlined in the 2007 strategy and aims to have a more joined-up approach, outlining actions the Government plans to take to reduce emissions from transport, homes, agriculture and industry. However, the air quality objectives remain as previously detailed within the 2007 strategy.

Local Air Quality Management Technical Guidance

- 3.35 The Department for Environment, Food and Rural Affairs has published technical guidance for use by local authorities in their air quality review and assessment work. This guidance, referred to in this document as the Local Air Quality Management Technical Guidance (‘Local Air Quality Management Technical Guidance 22’) [Ref. 16].

Land-Use Planning & Development Control: Planning for Air Quality

- 3.36 Environmental Protection UK and the Institute of Air Quality Management jointly published a revised version of the guidance note 'Land-Use Planning & Development Control: Planning for Air Quality' in 2017 (herein the 'Environmental Protection UK-Institute of Air Quality Management 2017 guidance') **[Ref. 17]** to facilitate consideration of air quality within local development control processes. It provides a framework for air quality considerations, promoting a consistent approach to the treatment of air quality issues within development control decisions.
- 3.37 The guidance includes methods for undertaking an air quality assessment and an approach for assessing the significance of effects. The guidance note is widely accepted as an appropriate reference method for this purpose.

Guidance on the Assessment of Dust from Demolition and Construction

- 3.38 The Institute of Air Quality Management published a guidance document on the assessment of construction phase impacts **[Ref. 18]**. The guidance was produced to provide advice to developers, consultants and environmental health officers on how to assess the impacts arising from construction activities. The emphasis of the methodology is on classifying sites according to the risk of impacts (in terms of dust nuisance, PM₁₀ impacts on public exposure and impact upon sensitive ecological receptors) and to identify mitigation measures appropriate to the level of risk identified.

Non-Road Mobile Machinery Practical Guide V.6

- 3.39 The Greater London Authority published a revised version of the guidance 'Non-Road Mobile Machinery Practical Guide V.6' **[Ref. 19]** in 2024 which provides guidance on the London non-road mobile machinery Low Emissions Zone, including the processes and procedures that must be in place on all development sites to comply with the policy.

Design Manual for Roads and Bridges LA 105 Air Quality

- 3.40 Design Manual for Roads and Bridges LA 105 Air Quality **[Ref. 20]** was published by National Highways in November 2019 and sets out the requirements for assessing and reporting the effects of highway projects on air quality.

4 ASSESSMENT SCOPE

Overall approach

- 4.1 The approach taken for assessing the potential air quality impacts of the Proposed Development may be summarised as follows:
- baseline characterisation of local air quality;
 - qualitative assessment of the construction and decommissioning phase of the Proposed Development;
 - qualitative assessment of the operation (including maintenance) phase of the Proposed Development;
 - cumulative impact assessment; and
 - recommendation of mitigation measures, where appropriate, to ensure any adverse effects on air quality are minimised.

Baseline characterisation

- 4.2 Existing or baseline air quality refers to the concentrations of relevant substances that are already present in ambient air. These substances are emitted by various sources, including road traffic, industrial, domestic, agricultural and natural sources.
- 4.3 A desk-based study has been undertaken including a review of monitoring data available from East Riding of Yorkshire Council and estimated background data from the Local Air Quality Management Support website maintained by the Department for Environment, Food and Rural Affairs. Consideration has also been given to potential sources of air pollution and the presence of air quality management areas.

Construction and decommissioning phases assessment methodology

Dust and particulate matter emissions during construction and decommissioning phases, including the operation of construction equipment

- 4.4 Construction and decommissioning works for the Proposed Development have the potential to lead to the release of fugitive dust and particulate matter. An assessment of the likely significant effects of construction and decommissioning phases dust and particulate matter at sensitive receptors has therefore been undertaken following the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18].
- 4.5 Three separate dust impacts were considered:

- annoyance due to dust soiling;
- the risk of health effects due to an increase in exposure to PM₁₀; and
- harm to ecological receptors.

4.6 In order to assess the potential impacts of construction and decommissioning, activities are divided into four types:

- demolition;
- earthworks;
- construction; and
- trackout (defined as the transport of dust and dirt from the construction/demolition sites onto public road network, where it may be deposited and then re-suspended by vehicles using the network).

4.7 The risk of dust and PM₁₀ arising to cause disamenity and/or health or ecological impacts was based on an assessment of likely emissions magnitude and the sensitivity of the surrounding environment. The risk category may be different for each of the four construction activities.

4.8 **Annex 1: Construction Dust Assessment Methodology** of this report sets out the construction dust assessment methodology in detail as per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18]. Once the level of risk has been determined, then site-specific mitigation proportionate to the level of risk can be identified (as detailed in **Section 7** of this assessment).

4.9 The Magic Map application available online by Defra [Ref. 21] was used to identify designated sites near the Site.

4.10 In the absence of any recommended guidance on the assessment of construction plant, the Non-Road Mobile Machinery Practical Guide [Ref. 19] has been adopted, which sets out the type of plant which is likely to have effects on air quality based on the size of plant. Whilst this guidance is used in London, taking account of the stricter emission limits set out by the Greater London Authority, it is considered robust for use for this assessment. The construction and decommissioning plant were then considered and assessed against the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18] methodology which states “consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur”.

Road traffic exhaust emissions during construction and decommissioning phases

4.11 Exhaust emissions from construction and decommissioning phase vehicles may have an impact on local air quality adjacent to the routes used by these vehicles to access the Site and in the vicinity of the Site itself. A qualitative screening level assessment against the Environmental Protection UK-Institute

of Air Quality Management 2017 guidance [Ref. 17] screening criteria has been undertaken to assess the impacts on air quality due to construction and decommissioning phase traffic. **Table 4.1** below presents the Environmental Protection UK-Institute of Air Quality Management 2017 guidance [Ref. 17] screening criteria.

Table 4.1: Indicative criteria for requiring an air quality assessment (from Environmental Protection UK-Institute of Air Quality Management 2017 Guidance)

The development will	Indicative criteria to proceed to an air quality assessment
Cause a significant change in Light Duty Vehicle traffic flows on local roads with relevant receptors	A change of Light Duty Vehicle flows of: -more than 100 Annual Average Daily Traffic within or adjacent to an Air Quality Management Area -more than 500 Annual Average Daily Traffic elsewhere.
Cause a significant change in Heavy Duty Vehicle flows on local roads with relevant receptors	A Change of Heavy Duty Vehicle flows of: -more than 25 Annual Average Daily Traffic within or adjacent to an Air Quality Management Area -more than 100 Annual Average Daily Traffic elsewhere.

- 4.12 The Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] sets out the requirements for assessing and reporting the effects of highway projects on air quality. The guidance states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the air quality assessment:
- daily traffic flow changes of 1,000 Annual Average Daily Traffic or more; or
 - Heavy Duty Vehicle flow changes of 200 Annual Average Daily Traffic or more.
- 4.13 Internationally, nationally and locally designated sites of ecological conservation importance on protected species and on habitats and other species identified as being of principal importance for the conservation of

biodiversity (known as designated habitats¹) within 200 m of the affected road network shall be included in the air quality assessment.

- 4.14 A qualitative assessment against the Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] screening criteria above has been undertaken to assess the impacts of the Proposed Development on ancient semi-natural woodland, Local Wildlife Sites (LWSs), Special Protection Areas (SPA), Ramsar and Special Areas of Conservation (SAC) due to construction and decommissioning phases traffic.

Operation (including maintenance) phase assessment methodology

Dust and particulate matter emissions during operation (including maintenance) phase (including operation of the Proposed Development and maintenance activities)

- 4.15 Given the nature of the Proposed Development, no site activities resulting in significant emissions to air are anticipated during operation. Therefore, this assessment has not considered dust and particulate matter emissions from the operation of the Proposed Development any further.
- 4.16 No significant combustion sources such as combined heat and power plant or biomass boilers are proposed as part of the Proposed Development. Therefore, this assessment has not considered emission related to energy generation any further.

Road traffic exhaust emissions during operation (including maintenance) phase

- 4.17 The Environmental Protection UK-Institute of Air Quality Management 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] provide indicative criteria for when an air quality assessment is likely to be required. If none of the criteria are exceeded, it is considered unlikely that there will be any significant impacts on air quality during the operation (including maintenance) phase.
- 4.18 Given the nature of the Proposed Development, there will only be limited movement of vehicles to the Site for maintenance. A screening level assessment against the Environmental Protection UK-Institute of Air Quality Management 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] screening criteria has been undertaken in this assessment.

¹ Designated habitats include 'Ramsar' sites, special protection areas, special areas of conservation, sites of special scientific interest, local nature reserves, local wildlife sites, nature improvement areas, ancient woodland and veteran trees.

5 BASELINE AIR QUALITY CHARACTERISATION

Emissions sources and key air pollutants

- 5.1 The Site is located south of A1035 and mostly to the west of the A165.
- 5.2 The main source of air pollution is likely to be road traffic emissions. The principal pollutants relevant to this assessment are considered to be NO₂, PM₁₀ and PM_{2.5}, generally regarded as the most significant air pollutants released by vehicular combustion processes, or subsequently generated by vehicle emissions in the atmosphere through chemical reactions.

Presence of Air Quality Management Areas

- 5.3 East Riding of Yorkshire Council has not declared any Air Quality Management Areas. Therefore, the Proposed Development is not located within an Air Quality Management Area.

Local authority air quality monitoring data

- 5.4 According to the East Riding of Yorkshire Council 2023 Air Quality Annual Status Report [Ref. 22], East Riding of Yorkshire Council undertook automatic monitoring at seven sites and non-automatic nitrogen dioxide (NO₂) diffusion tube monitoring at 92 locations during 2022.
- 5.5 Particulate matter monitoring data is not available in the vicinity (within 3km) of the Site. The nearest monitoring location to the study area is a roadside NO₂ diffusion tube location (East Riding of Yorkshire Council reference: S92) situated approximately 1.8km north-west from the Site. The S92 NO₂ diffusion tube location was new for 2022. The measured annual average NO₂ concentration at this diffusion tube site was 20.8µg/m³ in 2022, well below the annual mean NO₂ Air Quality Objective of 40µg/m³.

Local air quality management background data

- 5.6 Estimated background air quality data available from the Local Air Quality Management website operated by the Department for Environment, Food and Affairs [Ref. 23], may also be used to establish likely background air quality conditions at the Site.
- 5.7 The website provides estimated annual average background concentrations of NO₂, PM₁₀ and PM_{2.5} on a 1km² grid basis. **Table 5.1** reproduces estimated annual average background concentrations for the grid square containing the Proposed Development for years 2022 and 2024-2028.
- 5.8 No exceedances of the NO₂, PM₁₀ or PM_{2.5} Air Quality Standards are predicted. Background concentrations are in general predicted to fall with time,

because of the reduction in emissions to air resulting from new vehicle technology (for example, improved engine performance, electric vehicles and improvements in fuel quality). Therefore, background concentrations in future years are not expected to exceed their respective annual mean standards.

Table 5.1: Department for Environment, Food and Rural Affairs Local Air Quality Management estimated background annual average NO₂, PM₁₀, PM_{2.5} concentrations at the Site (from 2021 base map)

Assessment year	Estimated annual average pollutant concentrations derived from the Local Air Quality Management support website		
	Annual average NO ₂ (µg/m ³)	Annual average PM ₁₀ (µg/m ³)	Annual average PM _{2.5} (µg/m ³)
2022	5.8	13.4	5.9
2024 (current year)	5.5	13.3	5.7
2026 (expected construction commencement)	5.2	13.2	5.6
2027	5.0	13.1	5.6
2028	4.9	13.0	5.5
Air Quality Standards	40	40	20
Note: Presented concentrations for 1 km ² grid centred on 509500, 441500; approximate centre of the Site is 509955, 441244.			

6 ASSESSMENT OF IMPACT

Construction and decommissioning phases assessment

6.1 Atmospheric emissions from construction and decommissioning activities will depend on a combination of the potential for emissions (the type of activity and prevailing conditions) and the effectiveness of control measures. In general terms, there are two sources of emissions that will need to be controlled to minimise the potential for adverse environmental effects:

- dust emissions from site activities; and
- exhaust emissions from site plant, equipment and vehicles.

Dust and particulate matter emissions during construction and decommissioning phases, including the operation of construction equipment

Dust emissions from Site activities

6.2 Dust emissions arising from construction and decommissioning activities are likely to be variable in nature and will depend upon the type and extent of the activity, soil type and moisture content, road surface conditions and weather conditions. Periods of dry weather combined with higher than average wind speeds have the potential to generate more dust.

6.3 The construction and decommissioning activities anticipated as part of the Proposed Development that are often the most significant potential sources of fugitive dust emissions are:

- demolition;
- earthworks comprising of levelling, construction of foundations, haulage, tipping, stockpiling, landscaping and tree removal;
- construction of the Proposed Development and hard landscaped areas; and
- trackout, involving the movement of vehicles over surfaces where muddy materials have been transferred off-site (for example, on to public highways).

Dust emissions magnitude

6.4 With reference to the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18] criteria outlined in **Annex 1: Construction Dust Assessment Methodology** of this assessment, the dust emissions magnitude for demolition, earthworks, construction and trackout activities are summarised in **Table 6.1**.

Table 6.1: Summary of dust emission magnitude (before mitigation)

Activity	Evaluation of the effects	Dust emission magnitude
Demolition (during decommissioning phase only)	<ul style="list-style-type: none"> - The total building volume to be demolished is assumed to be <12,000m². - No on-site crushing and screening is proposed. - The height of demolition activities above ground is estimated to be <6m. - Demolition materials are potentially dusty. 	Small
Earthworks	<ul style="list-style-type: none"> - Total site area is >110,000m². - The number of heavy earthmoving vehicles active at any one time is expected to be 5-10. - The height of stockpiled materials is assumed to be 3-6m. 	Medium
Construction	<ul style="list-style-type: none"> - Total building volume is estimated to be 12,000m³-75,000m³. - No on-site concrete batching and sandblasting is proposed. - Construction materials are considered to be potentially dusty. 	Medium
Trackout	<ul style="list-style-type: none"> - The number of Heavy Duty Vehicle outward movements in any one day is estimated to be 20-50. - The extent as to which vehicles are to travel on unpaved roads is assumed to be 50-100m. 	Medium

Sensitivity of the area

6.5 As per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18], the sensitivity of the area takes into account a number of factors, comprising:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM₁₀, the local background concentration; and

- site specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.
- 6.6 Consideration is given to human receptors and designated sites; distances are calculated from the Order Limits and the trackout route proposed.
- 6.7 **ES Volume 3, Figure 6.1: Demolition (during decommissioning phase)/Earthworks/Construction Activities Study Areas and Figure 6.2: Trackout Activities Study Areas [EN010157/APP/6.3]** show maps indicating the demolition (during decommissioning phase)/earthworks/construction activities study areas and trackout activities study areas respectively, for identifying the sensitivity of the area. **Table 6.2** presents the determined sensitivity of the area. Construction activities are relevant up to 250m from the Order Limits (i.e. 20m, 50m, 100m and 250m study areas have been considered in the assessment) whereas trackout activities are only considered relevant up to 50m from the edge of the road (i.e. 20m and 50m study areas have been considered in the assessment), as per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 18]**.
- 6.8 Human receptors have been identified within 250m of the Order Limits, comprising:
- The village of Long Riston;
 - The village of Woodmansey;
 - The village of Routh;
 - The village of Arnold;
 - The village of Weel; and
 - Public rights of way (PRoWs).
- 6.9 The following designated sites (habitats) have been identified within 50m of the Order Limits:
- Figham Pasture LWS (within the Order Limits - the grid connection to National Grid Creyke Beck Substation passes through Figham Pasture LWS);
 - Cote Wood LWS/ancient semi-natural woodland (borders Fields D11 and D17 in Land Area D, abutting the Order Limits);
 - Meaux LWS (the northern end directly abuts the Order Limits and the southern end is 20m north of Field F6 within Land Area F); and
 - Arnold Drain LWS (approximately 50m from the Order Limits at its closest point (Field C7 in Land Area C)).

Table 6.2: Sensitivity of the area

Potential impact		Sensitivity of the area			
		Demolition (during decommissioning phase)	Earthworks	Construction	Trackout
Dust soiling	Receptor sensitivity	High	High	High	High
	Number of receptors	10-100	10-100	10-100	1-10
	Distance from the source	<20m	<20m	<20m	<20m
	Sensitivity of the area	High	High	High	Medium
Human health	Receptor sensitivity	High	High	High	High
	Annual mean PM ₁₀ concentration	<24µg/m ³	<24µg/m ³	<24µg/m ³	<24µg/m ³
	Number of receptors	10-100	10-100	10-100	1-10
	Distance from the source	<20m	<20m	<20m	<20m
	Sensitivity of the area	Low	Low	Low	Low
Ecological	Receptor sensitivity*	Low	Low	Low	Low
	Distance from the source	<20m	<20m	<20m	>50m
	Sensitivity of the area	Low	Low	Low	Low
*Designated sites listed in Section 6.9 are considered to have a low sensitivity to dust deposition.					

Risk of dust impacts

- 6.10 The dust emission magnitude (refer to **Table 6.1**) is combined with the sensitivity of the area (refer to **Table 6.2**) to determine the risk of impacts of construction activities before mitigation; these are evaluated based on risk categories of each activity in **Annex 1: Construction Dust Assessment Methodology** of this assessment. The risk of dust impacts from construction and decommissioning activities is identified in **Table 6.3**. Site specific mitigation measures to reduce construction and decommissioning phase impacts are defined based on this assessment in **Section 7**.

Table 6.3: Summary of the dust risk from construction activities

Potential impact	Dust risk impact			
	Demolition (during decommissioning phase only)	Earthworks	Construction	Trackout
Dust soiling	Medium risk	Medium risk	Medium risk	Medium risk
Human health	Negligible	Low risk	Low risk	Low risk
Ecological	Negligible	Low risk	Low risk	Low risk

Exhaust emissions from construction and decommissioning plant

- 6.11 As set out in the Non-Road Mobile Machinery Practical Guide **[Ref. 19]**, only construction and decommissioning plant with a rated power output between 37-560 kW are likely to give rise to air quality effects. Plant sized between 37-560 kW which is likely to be used during the construction and decommissioning of the Proposed Development is likely to comprise:
- excavator;
 - mobile crane;
 - crawled dozer;
 - push press piling rig;
 - power generator;
 - telehandler; and
 - truck.
- 6.12 The above plant will be used intermittently during the two-year construction programme, depending on the construction activities to be undertaken and will

move across the Site as the Proposed Development is built out. Construction working hours will be from 07:00 until 19:00 Monday to Friday and from 07:00 until 12:00 on Saturday. There will be no working on Sundays or Bank Holidays unless necessary and agreed with the local planning authority.

- 6.13 As detailed in **ES Volume 1, Chapter 3: The Proposed Development Description [EN010157/APP/6.1]**, setback distances from residential properties (a minimum offset distance of 50m from solar PV modules and other infrastructure, and an offset distance of 250m from the two on-site substations) and environmental designated sites (a minimum offset distance of 250m from the two on-site substations) are included within the design principles and are secured through the **Works Plans [EN010157/APP/2.2]**. These distances, as well as the temporary nature of the plant to be used, and the low levels of air pollution at the Site (refer to **paragraphs 5.5 and 5.8**) means it is unlikely there will be a risk of emissions (either in isolation or combination) that could result in an exceedance of the Air Quality Standards. Furthermore, construction and decommissioning plant will be managed in a way which minimises the potential air quality impacts at sensitive receptor locations through measures included within the **Outline Construction Environmental Management Plan (Outline CEMP) [EN010157/APP/7.2]** and **Outline Decommissioning Environmental Management Plan (Outline DEMP) [EN010157/APP/7.4]**. Therefore, there is likely to be no significant air quality effects as a result of the construction and decommissioning plant of the Proposed Development.

Road traffic exhaust emissions during construction and decommissioning phases

- 6.14 The operation of vehicles powered by internal combustion engines results in the emission of exhaust gases containing the pollutants nitrogen oxides, PM₁₀, volatile organic compounds and carbon monoxide. The quantities emitted depend on factors such as engine type, service history, pattern of usage and fuel composition.
- 6.15 Construction and decommissioning traffic will comprise haulage/construction/decommissioning vehicles and vehicles used for workers' trips to and from the Site. The greatest impact on air quality due to emissions from construction and decommissioning phase vehicles will be in areas adjacent to the application site access and nearby road network.
- 6.16 Apart from the designated sites (habitats) listed in **paragraph 6.9**, five European designated sites have been considered in the road traffic exhaust emission assessments:
- Hornsea Mere Special Protection Area (SPA);
 - Humber Estuary Ramsar, SPA and SAC; and
 - Greater Wash SPA.

- 6.17 Information from the Air Pollution Information System has not been used in this assessment as a qualitative assessment of air quality impacts on designated sites has been undertaken.

Construction phase traffic

- 6.18 Construction phase Annual Average Daily Traffic data (two-way trips) assumes that the year 2026 is the anticipated construction traffic peak. The year 2026 is the anticipated construction traffic peak as it will have lower base traffic compared to 2027 or 2028, and therefore results in the Proposed Development generating a higher percentage impact compared to undertaking the assessment for later years. Construction phase traffic data is provided in **Table 6.4**.

Table 6.4: Construction phase traffic data

Land area	2026 construction traffic associated with the Proposed Development	
	Light Duty Vehicles (Annual Average Daily Traffic)	Heavy Duty Vehicles (Annual Average Daily Traffic)
B	76	30
C	84	40
D	162	62
E	76	30
F	62	24
Grid Connection	20	10

- 6.19 The peak daily Light Duty Vehicle movements is anticipated to be 266 Annual Average Daily Traffic, with Land Areas C and D constructed simultaneously, plus grid connection works. The Proposed Development is not predicted to generate Light Duty Vehicle movements exceeding the Environmental Protection UK-Institute of Air Quality Management 2017 guidance **[Ref. 17]** (i.e. a change of Light Duty Vehicle flows of more than 500 Annual Average Daily Traffic) during the construction phase. The peak daily Heavy Duty Vehicle movements is anticipated to be 112 Annual Average Daily Traffic. The predicted construction phase Heavy Duty Vehicle generation slightly exceeds the Environmental Protection UK-Institute of Air Quality Management 2017 guidance **[Ref. 17]** (i.e. a change of Heavy Duty Vehicle flows of more than 100 Annual Average Daily Traffic). However, as per the review of baseline conditions in **Section 5**, the annual mean NO₂, PM₁₀ and PM_{2.5} concentrations at the Site are expected to be well below the Air Quality Standards. The traffic

effects during construction will be limited to a relatively short period at each phase of the Proposed Development and will be along traffic routes employed by haulage/construction vehicles and workers. Therefore, it is considered unlikely that the additional construction phase traffic emissions as a result of the Proposed Development will cause a significant adverse effect on local air quality and on nearby human receptors.

- 6.20 The Proposed Development is not predicted to generate construction traffic exceeding the Design Manual for Roads and Bridges LA 105 Air Quality **[Ref. 20]** screening criteria (i.e. Light Duty Vehicle flow changes of 1,000 Annual Average Daily Traffic or more or Heavy Duty Vehicle flow changes of 200 Annual Average Daily Traffic or more) during the construction phase. Therefore, it is considered unlikely that the additional construction phase traffic emissions as a result of the Proposed Development will cause a significant adverse effect on designated sites.

Decommissioning phase traffic

- 6.21 Decommissioning year is assumed to be 40 years from commissioning. It is assumed that vehicular generation during decommissioning phase is similar or slightly fewer than the construction phase.
- 6.22 The Proposed Development is not expected to generate traffic exceeding the Environmental Protection UK-Institute of Air Quality Management 2017 guidance **[Ref. 17]** and Design Manual for Roads and Bridges LA 105 Air Quality **[Ref. 20]** screening criteria during decommissioning phase. Therefore, it is considered unlikely that the additional decommissioning phase traffic emissions as a result of the Proposed Development will cause a significant adverse effect on local air quality, and human receptors and designated sites.

Operation (including maintenance) phase assessment

Road traffic exhaust emission during operation (including maintenance) phase

- 6.23 Due to the nature of the Proposed Development, the principal operational (including maintenance) phase air quality impact is likely to be associated with traffic emissions as a result of any changes in traffic flows or flow composition the Proposed Development may bring. The vehicle trip generation from the Proposed Development once operational is anticipated to be minimal in comparison to the construction and decommissioning phases. It is anticipated that there will be 4 two-way Light Duty Vehicle trips per day during the operation (including maintenance) phase.
- 6.24 The Proposed Development is not expected to generate traffic exceeding the Environmental Protection UK-Institute of Air Quality Management 2017 guidance **[Ref. 17]** and Design Manual for Roads and Bridges LA 105 Air Quality **[Ref. 20]** screening criteria once operational and therefore, it is considered that further assessment of the operational (including maintenance) phase traffic emissions is not required. The increased road traffic emissions



resulting from the Proposed Development are expected to have a negligible impact on air quality, and human receptors and designated sites during the operational (including maintenance) phase. The effect of road traffic exhaust emissions during operation (including maintenance) phase without mitigation measures is considered to be not significant.

7 MITIGATION MEASURES

Construction and decommissioning phases

Dust emissions from Site activities

- 7.1 The dust emitting activities outlined in **Section 6** can be effectively controlled by appropriate dust control measures (described in **Table 7.1** below) and any adverse effects can be greatly reduced or eliminated. The mitigation measures described in **Table 7.1** will be used to control potential dust and particulate matter emissions during the construction and decommissioning phases. Mitigation measures are documented within and will be secured by the **Outline CEMP [EN010157/APP/7.2]** and the **Outline DEMP [EN010157/APP/7.4]**.
- 7.2 The dust risk categories identified have been used to define appropriate, site-specific mitigation measures for the Proposed Development, which are divided into general measures and measures specific to demolition, earthworks, construction and trackout. Depending on the level of risk, different mitigation measures are assigned, in accordance with the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 18]. For general mitigation measures, the highest risk assessed has been applied.

Table 7.1: Dust emissions mitigation measures

Communications
<ul style="list-style-type: none"> • Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site. • Display the name and contact details of people accountable for air quality and dust issues with respect to the Proposed Development. This may be the environment manager/engineer or the site manager. • Display the head or regional office contact information. • Implement a Construction Environmental Management Plan, which includes measures to control all emissions, to be approved by East Riding of Yorkshire Council.
Site management
<ul style="list-style-type: none"> • 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 East Riding of Yorkshire Council when asked. • Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site and the action taken to resolve the situation in the logbook.

Monitoring

- Undertake regular on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to East Riding of Yorkshire Council when asked. Monitoring will, where possible, include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the Order Limits in agreement with the relevant homeowners/landowners.
- Carry out regular site inspections to monitor compliance with the Construction Environmental Management Plan, record inspection results, and make an inspection log available to East Riding of Yorkshire Council when asked.
- Increase the 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.
- During the construction and decommissioning phases, agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with East Riding of Yorkshire Council. Where possible commence monitoring at least three months before work commences on site.

Preparing and maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from sensitive receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the Order Limits.
- Fully enclose site or specific operations where there is a high potential for dust production and the Site is active for an extensive period.
- Avoid runoff of water or mud from the Site.
- Keep site fencing, barriers and scaffolding clean.
- 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.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Impose and signpost a maximum speed limit of 10 miles per hour on internal tracks and work areas.
- Produce a Construction Traffic Management Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel.

Construction operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. 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 wet cleaning methods.

Waste management

- Avoid bonfires or burning of waste material.

Measures specific to demolition (during decommissioning phase only)

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Measures specific to earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Only remove the cover in stages during work and not all at once.

Measures specific to construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- 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.
- 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 power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures specific to 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 any dry sweeping of large areas.
- Ensure vehicles entering and leaving Site are covered to prevent escape of materials during transport.
- Inspect on-Site haul routes for integrity and instigate necessary repairs to the surface.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system.
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit.
- Access gates to be located at least 10m from sensitive receptors.

Exhaust emissions from construction and decommissioning plant

- 7.3 Any emissions from non-road mobile machinery can be reduced by ensuring that any plant used on-site comply with the nitrogen oxides, particulate matter and carbon monoxide emissions standards specified in the Regulation (EU) 2016/1628 of the European Parliament and of the Council (as amended) **[Ref. 24]** as a minimum, where they have net power of between 37 kW and 560 kW. The emissions standards vary depending on the net power the engine produces. The emissions controls are outlined and secured within the **Outline CEMP [EN010157/APP/7.2]** and the **Outline DEMP [EN010157/APP/7.4]** which have been prepared and are submitted in the support of the DCO Application. The construction working hours are detailed within the **Outline CEMP [EN010157/APP/7.2]**.

Road traffic exhaust emissions during construction and decommissioning phases

- 7.4 Any effects on air quality from traffic during construction and decommissioning of the Proposed Development will be temporary (i.e. during the construction/decommissioning period only) and can be suitably controlled by the employment of mitigation measures (described in **Table 7.1** above and documented within the **Outline Construction Traffic Management Plan (Outline CTMP) [EN010157/APP/7.7]** and appended **Outline Travel Plan**) which has been prepared and is submitted in support of the DCO Application.

Operation (including maintenance) phase

Road traffic exhaust emissions during operation (including maintenance) phase

- 7.5 No specific operation (including maintenance) phase mitigation measures are required. Nevertheless, best practice mitigation measures (described in **Table 7.1** above) can be considered to further reduce any residual effects on air quality. An **Outline Operational Environmental Management Plan (Outline OEMP) [EN010157/APP/7.3]** including such measures described has been prepared and is submitted in support of the DCO Application.

8 RESIDUAL EFFECTS

Construction and decommissioning phases

Dust and particulate matter emissions during construction and decommissioning phases, including the operation of construction equipment

- 8.1 Construction and decommissioning effects are not significant provided that appropriate dust control and construction and decommissioning phases mitigation measures are applied as listed in the mitigation measures section (refer to **paragraphs 7.1 to 7.3**). Residual effect is therefore **not significant**.

Road traffic exhaust emissions during construction and decommissioning phases

- 8.2 Any effects on air quality from traffic during construction and decommissioning of the Proposed Development will be temporary (i.e. during the construction/decommissioning period only) and can be suitably controlled by the employment of mitigation measures (refer to **paragraph 7.4**). Residual effect is therefore **not significant**.

Operation (including maintenance) phase

Road traffic exhaust emissions during operation (including maintenance) phase

- 8.3 The Proposed Development is not anticipated to have a significant effect on local air quality. Nevertheless, best practice mitigation measures described in **Table 7.1** and documented within the **Outline OEMP [EN010157/APP/7.3]** can be considered to further reduce any residual effects on air quality. Residual effect of the Proposed Development on air quality whilst it is in operation is considered to be **not significant**.

9 CUMULATIVE EFFECTS

Construction and decommissioning phases

- 9.1 The phasing/commencement of any other committed (i.e. permitted and proposed) developments in the locality could potentially result in a scenario where a number of other construction sites are in operation at the same time as the Proposed Development and concurrently generating emissions to air.
- 9.2 Nine projects have been included within the cumulative assessment, which are:
- Construction of solar photovoltaic development including solar panels, installation of sub-station, transformers, storage containers, erection of perimeter fence and CCTV poles with associated access, gates, internal tracks, infrastructure, landscaping and biodiversity enhancements and erection of temporary construction compound (Application reference: 22/01208/STPLF);
 - Construction of solar photovoltaic development including solar panels, installation of sub-station, medium voltage power stations, battery energy storage containers, erection of perimeter fence and CCTV poles with associated access and erection of temporary construction compound (Application reference: 22/00824/STPLF);
 - Construction of a 49.9MW Solar Farm, underground cabling, 18 inverter substations, installation of perimeter fencing (up to 2.5m high) with access gates and 176 CCTV cameras/infrared lighting on steel poles (up to 3.5m high steel poles) and 2 temporary construction compounds; construction of a grid compound consisting of substations, control rooms, transformers, cabling and fencing; construction of a storage compound consisting of 24 battery storage containers, 24 PCS units and 2.5m high perimeter fencing and associated grid infrastructure and associated works (Application reference: 21/02335/STPLF);
 - Construction of a 49.99MW Solar Farm comprising: ground mounted solar panels, transformers, substation, DNO control room, customer substation, GRP communications cabin, security fencing, landscaping and other associated infrastructures (Application reference: 22/02775/STPLF);
 - Construction of 49.9MW Solar Farm comprising of ground mounted solar panels, underground cabling, a temporary construction compound, access tracks, perimeter fencing with CCTV cameras, access gates and associated ancillary grid infrastructure and work (Application reference: 22/03648/STPLF and 22/01811/EIASCR);
 - The Dogger Bank South Offshore Wind Farms project comprises the two offshore wind farms (Dogger Bank South West and Dogger Bank South East) and associated offshore and onshore infrastructure including offshore and onshore high voltage electricity cables, onshore and offshore

electricity substation(s), connection(s) to the National Grid and ancillary and temporary works. The onshore grid connection route intersects with the Order Limits. (Application reference: EN010125);

- Development of the Hornsea Project Four offshore wind farm. This is within the western area of the former Hornsea known as Zone 4, under the Round 3 offshore wind licensing arrangements established by The Crown Estate. The onshore grid connection route runs adjacent to the Order Limits. (Application reference: EN010098);
- Creyke Beck Substation Extension (Creyke Beck, near Cottingham, north of Hull). An extension of the existing Creyke Beck 400 kV substation to connect the proposed Hornsea Four offshore windfarm and a solar and battery storage project. Extension southwest of the existing substation. The proposed substation extension compound would occupy approximately 6.41 hectares maximum and the maximum height of the proposed equipment within the extension would be 17 metres. (Application reference: N/A); and
- Dogger Bank D (DBD) Offshore Wind Farm encompasses a circa 2000MW offshore wind farm, offshore high voltage transmission and potential onshore transmission and Hydrogen Production Facility infrastructure. The onshore grid connection route intersects with the Order Limits. (Application reference: EN010144).

- 9.3 The Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 18]** states that beyond 250m from a site boundary, the risk of impact from activities carried out on-site during the construction phase can be considered to be negligible. The above nine short-listed developments are within 250m of the Order Limits. All permitted development is expected to agree and follow a site-specific Construction Environmental Management Plan and Decommissioning Environmental Management Plan that will adequately control dust emissions and construction plant exhaust emissions from construction and decommissioning.
- 9.4 Cumulative construction and decommissioning phases Annual Average Daily Traffic data (two-way trips) has been considered within this assessment. Construction and decommissioning phases traffic data is provided in **Table 9.1** in **Table 9.2** below respectively.
- 9.5 As stated in **Section 6.20**, it is assumed that vehicular generation during decommissioning phase from the Proposed Development is similar or slightly fewer than the construction phase. Therefore, construction phase peak daily Light Duty Vehicle movements and peak daily Heavy Duty Vehicle movements have been used for decommissioning phase as a worst-case scenario in this assessment.

Table 9.1: Cumulative construction phase traffic data

	Cumulative construction traffic	
	Light Duty Vehicles (Annual Average Daily Traffic)	Heavy Duty Vehicles (Annual Average Daily Traffic)
Proposed Development	266 (peak daily Light Duty Vehicle movements)	112 (peak daily Heavy Duty Vehicle movements)
Committed developments	1,856	1,068
Total	2,122	1,180

Table 9.2: Cumulative construction phase traffic data

	Cumulative decommissioning traffic	
	Light Duty Vehicles (Annual Average Daily Traffic)	Heavy Duty Vehicles (Annual Average Daily Traffic)
Proposed Development	266 (peak daily Light Duty Vehicle movements)	112 (peak daily Heavy Duty Vehicle movements)
Committed developments	0	48
Total	266	160

- 9.6 The predicted cumulative construction phase Light Duty Vehicles generation and Heavy Duty Vehicles generation exceeds the Environmental Protection UK and IAQM 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] screening criteria, but this does not necessarily suggest that a significant impact is likely. The Environmental Protection UK and IAQM 2017 guidance [Ref. 17] notes that “*the criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive ‘trigger’ for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases*”.

- 9.7 Based on the review of baseline conditions, the annual mean NO₂ and PM₁₀ concentrations at the Site are expected to be well below the Air Quality Standards. The traffic effects during the construction phase will be limited to a relatively short period at each section/phase of the Proposed Development and the developments on the short list, and will be along traffic routes employed by haulage/construction vehicles and workers. All of the short-listed developments are expected to agree and follow a site-specific Construction Traffic Management Plan that will adequately control road traffic exhaust emissions from construction.
- 9.8 The Proposed Development and all of the short-listed developments are not predicted to generate traffic exceeding the Environmental Protection UK and IAQM 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality screening criteria [Ref. 20] during the decommissioning phase. All of the short-listed developments are expected to agree and follow a site-specific Decommissioning Environmental Management Plan that will adequately control road traffic exhaust emissions from decommissioning. Therefore, it is considered unlikely that the additional cumulative decommissioning phase traffic emissions as a result of the Proposed Development and all of the short-listed developments will cause a significant adverse effect on nearby human receptors and designated sites.
- 9.9 Overall, with appropriate mitigation measures in place, the construction and decommissioning phases cumulative effect is considered to be **not significant**.

Operation (including maintenance) phase

- 9.10 Cumulative operational (including maintenance) phase Annual Average Daily Traffic data (two-way trips) is provided in **Table 9.3** below.

Table 9.3: Cumulative construction phase traffic data

	Cumulative operational traffic	
	Light Duty Vehicles (Annual Average Daily Traffic)	Heavy Duty Vehicles (Annual Average Daily Traffic)
Proposed Development	4	0
Committed developments	<1 (20-30 movements per year)	0
Total	5	0

- 9.11 The Proposed Development and all of the short-listed developments are not expected to generate traffic exceeding the relevant screening criteria once operational (i.e. Environmental Protection UK-IAQM 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] screening criteria). All of the short-listed developments are expected to follow best practice mitigation measures and a site-specific Operational Environmental Management Plan to minimise emissions to air. Therefore, exceedance of the relevant Air Quality Standards is considered unlikely and cumulative operation (including maintenance) phase effects are considered **not significant**. Operation (including maintenance) phase effects are screened out of **ES Volume 2, Chapter 6: Air Quality [EN010157/APP/6.2]** as they do not exceed the relevant screening criteria of the Environmental Protection UK-IAQM 2017 guidance [Ref. 17] and Design Manual for Roads and Bridges LA 105 Air Quality [Ref. 20] during operation (including maintenance) phase. Therefore, cumulative effects during the operation (including maintenance) phase are not considered further in **ES Volume 2, Chapter 15: Cumulative Effects [EN010157/APP/6.2]**.

10 REFERENCES

- **Ref. 1:** Air Quality (England) Regulations 2000. Available online: <https://www.legislation.gov.uk/uksi/2000/928/contents/made>
- **Ref. 2:** Air Quality (England) (Amendment) Regulations 2002. Available online: <https://www.legislation.gov.uk/uksi/2002/3043/contents/made>
- **Ref. 3:** The Air Quality Limit Values Regulations 2003. Available online: <https://www.legislation.gov.uk/uksi/2003/2121/made>
- **Ref. 4:** Directive 2008/50/EC of the European Parliament and of the Council of 21st May 2008 on Ambient Air Quality and Cleaner Air for Europe. Available online: <https://faolex.fao.org/docs/pdf/eur80016.pdf>
- **Ref. 5:** Air Quality Standards Regulations 2010. Available online: <https://www.legislation.gov.uk/uksi/2010/1001/contents/made>
- **Ref. 6:** Air Quality Standards (Amendment) Regulations 2016. Available online: <https://www.legislation.gov.uk/uksi/2016/1184/contents/made>
- **Ref. 7:** Environment Act 1995. Available online: <https://www.legislation.gov.uk/ukpga/1995/25/contents>
- **Ref. 8:** Environment Act 2021. Available online: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>
- **Ref. 9:** Environment Targets (Fine Particulate Matter) (England) Regulations 2023. Available online: <https://www.legislation.gov.uk/uksi/2023/96/contents/made>
- **Ref. 10:** Department for Energy Security and Net Zero (2023). Overarching National Policy Statement for Energy (EN-1). Available online: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>
- **Ref. 11:** Ministry of Housing, Communities and Local Government (2024). National Planning Policy Framework (NPPF). Available online: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>
- **Ref. 12:** East Riding of Yorkshire Council (2016) East Riding Local Plan. Available online: <https://downloads.eastriding.org.uk/corporate/pages/east-riding-local-plan/Strategy%20Document%20-%20Adopted%20April%202016%20lo.pdf>
- **Ref. 13:** Department for Environment, Food and Rural Affairs (Defra) (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1). Available online: <https://assets.publishing.service.gov.uk/media/5a758459ed915d731495a940/pb12654-air-quality-strategy-vol1-070712.pdf>
- **Ref. 14:** Department for Environment, Food and Rural Affairs (Defra) (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 2). Available online:

<https://assets.publishing.service.gov.uk/media/5a79b5f3ed915d07d35b789c/pb12670-air-quality-strategy-vol2-070712.pdf>

- **Ref. 15:** Department for Energy Security and Net Zero, Department for Environment, Food and Rural Affairs (Defra), Department for Transport (DfT), Department of Health and Social Care and Ministry of Housing, Communities and Local Government (2019). The Clean Air Strategy 2019. Available online: <https://www.gov.uk/government/publications/clean-air-strategy-2019>
- **Ref. 16:** Department for Environment, Food and Rural Affairs (Defra) (2022). Local Air Quality Management Technical Guidance (TG22). Available online: <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>
- **Ref. 17:** Environmental Protection UK and Institute of Air Quality Management (2017). Land-Use Planning and Development Control: Planning for Air Quality. Available online: <https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>
- **Ref. 18:** Institute of Air Quality Management (2024). Guidance of the Assessment of Dust from Demolition and Construction (Version 2.2). Available online: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>
- **Ref. 19:** Greater London Authority (2024). Non-Road Mobile Machinery Practical Guide V.6. Available online: <https://www.london.gov.uk/sites/default/files/2024-05/NRMM-Practical-Guide-Accessible-May2024.pdf>
- **Ref. 20:** National Highways (2019) Design Manual for Roads and Bridges LA 105 Air Quality. Available online: <https://www.standardsforhighways.co.uk/search/10191621-07df-44a3-892e-c1d5c7a28d90>
- **Ref. 21:** Department for Environment, Food and Rural Affairs (Defra) (2014). MAGIC Map. Available online: <https://magic.defra.gov.uk/>
- **Ref. 22:** East Riding of Yorkshire Council (2023) 2023 Air Quality Annual Status Report. Available online: [https://downloads.eastriding.org.uk/corporate/pages/air-quality-monitoring/pdfs/Air%20Quality%20Annual%20Status%20Report%20\(ASR\)%202023.pdf](https://downloads.eastriding.org.uk/corporate/pages/air-quality-monitoring/pdfs/Air%20Quality%20Annual%20Status%20Report%20(ASR)%202023.pdf)
- **Ref. 23:** Department for Environment, Food and Rural Affairs (Defra) (2021). Background Mapping Data for Local Authorities-2021. Available online: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>
- **Ref. 24:** Regulation (EU) 2016/1628 of the European Parliament and of the Council. Available online: <https://www.legislation.gov.uk/eur/2016/1628/article/4>
- **Ref. 25:** Joint Nature Conservation Committee (2020). Red Data List For Great Britain. Available online: <https://jncc.gov.uk/our-work/red-lists-in-great-britain/>

ANNEX 1

CONSTRUCTION DUST ASSESSMENT METHODOLOGY

This annex contains the construction dust assessment methodology used in the assessment.

To assess the potential impacts, construction activities are divided into demolition, earthworks, construction and trackout. The descriptors included in this section are based upon the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 [Ref. 19]. The assessment follows the steps recommended in the guidance.

Step 1: Screen the requirement for assessment

The first step is to screen out the requirement for a construction dust assessment, this is usually a somewhat conservative level of screening. An assessment is usually required where there is:

- a 'human receptor' within:
 - 250m of the boundary of the site; or
 - 50m of the route used by construction vehicles on the public highway, up to 250m from the site entrance(s).
- an 'ecological receptor':
 - 50m of the boundary of the site; or
 - 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).

Step 2A: Defining the Potential Dust Emission Magnitude

Demolition

The dust emission magnitude category for demolition is varied for each site in terms of timing, building type, duration and scale. Examples of the potential dust emission classes are provided in the guidance as follows:

- **Large:** Total building volume $>75,000\text{m}^3$, potentially dusty construction material, on-site crushing and screening, demolition activities $>12\text{m}$ above ground level;
- **Medium:** Total building volume $12,000\text{m}^3 - 75,000\text{m}^3$, potentially dusty construction material, demolition activities $6\text{m} - 12\text{m}$ above ground level; and
- **Small:** Total building volume $<12,000\text{m}^3$, construction material with low potential for dust release, demolition activities $<6\text{m}$ above ground, demolition during wetter months.

Earthworks

The dust emission magnitude category for earthworks is varied for each site in terms of timing, geology, topography and duration. Examples of the potential dust emission classes are provided in the guidance as follows:

- **Large:** Total site area $>110,000\text{m}^2$, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds $>6\text{m}$ in height;
- **Medium:** Total site area $18,000\text{m}^2 - 110,000\text{m}^2$, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 3m – 6m in height; and
- **Small:** Total site area $< 18,000\text{m}^2$, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds $<3\text{ m}$ in height.

Construction

The dust emission magnitude category for construction is varied for each site in terms of timing, building type, duration, and scale. Examples of the potential dust emissions classes are provided in the guidance as follows:

- **Large:** Total building volume $>75,000\text{m}^3$, on site concrete batching, sandblasting;
- **Medium:** Total building volume $12,000\text{m}^3 - 75,000\text{m}^3$, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- **Small:** Total building volume $<12,000\text{m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout

Factors which determine the dust emission magnitude class of trackout activities are vehicle size, vehicle speed, vehicle number, geology and duration. Examples of the potential dust emissions classes are provided in the guidance as follows:

- **Large:** >50 Heavy Duty Vehicle ($>3.5\text{t}$) trips in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length $>100\text{m}$;
- **Medium:** 20 – 50 Heavy Duty Vehicle ($>3.5\text{t}$) trips in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 – 100m; and
- **Small:** <20 Heavy Duty Vehicle ($>3.5\text{t}$) trips in any one day, surface material with low potential for dust release, unpaved road length $<50\text{m}$.

Step 2B: Defining the Sensitivity of the Area

The sensitivity of the area is defined for dust soiling, human health and ecosystems. The sensitivity of the area takes into account the following factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;

- In the case of PM₁₀, the local background concentration; and
- Site-specific factors, such as whether there are natural shelters such as trees, to reduce the risk of wind-blown dust.

Table 1 has been used to define the sensitivity of different types of receptors to dust soiling, health effects and ecological effects.

Table 1: Scale of receptors sensitivity

Sensitivity of receptor	Dust soiling	Human receptors	Ecological receptors
High	<p>Users can reasonably expect an enjoyment of a high level of amenity.</p> <p>The appearance, aesthetics or value of their property would be diminished by soiling.</p> <p>The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.</p> <p>Examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.</p>	<p>Locations where members of the public are exposed over a time period relevant to the air quality objective for PM₁₀ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).</p> <p>Examples include residential properties, hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.</p>	<p>Locations with an international or national designation and the designated features may be affected by dust soiling.</p> <p>Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain published by Joint Nature Conservation Committee [Ref. 25].</p> <p>Examples include a Special Area of Conservation designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.</p>
Medium	<p>Users would expect to enjoy a reasonable level of amenity, but would</p>	<p>Locations where the people exposed are workers and exposure is over a</p>	<p>Locations where there is a particularly important plant species, where its dust</p>

Sensitivity of receptor	Dust soiling	Human receptors	Ecological receptors
	<p>not reasonably expect to enjoy the same level of amenity as in their home.</p> <p>The appearance, aesthetics or value of their property could be diminished by soiling.</p> <p>The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.</p> <p>Examples include parks and places of work.</p>	<p>time period relevant to the air quality objective for PM₁₀ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).</p> <p>Examples include office and shop workers, but will generally not include workers occupationally exposed to PM₁₀, as protection is covered by Health and Safety at Work legislation.</p>	<p>sensitivity is uncertain or unknown.</p> <p>Locations with a national designation where the features may be affected by dust deposition.</p> <p>Example is a Site of Special Scientific Interest with dust sensitive features.</p>
Low	<p>The enjoyment of amenity would not reasonably be expected.</p> <p>Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling.</p> <p>There is transient exposure, where the people or property would reasonably be expected to be present only for</p>	<p>Locations where human exposure is transient.</p> <p>Examples include public footpaths, playing fields, parks and shopping streets.</p>	<p>Locations with a local designation where the features may be affected by dust deposition.</p> <p>Example is a Local Nature Reserve with dust sensitive features.</p>

Sensitivity of receptor	Dust soiling	Human receptors	Ecological receptors
	<p>limited periods of time as part of the normal pattern of use of the land.</p> <p>Examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.</p>		

Based on the sensitivities assigned of the different types of receptors surrounding the site and numbers of receptors within certain distances of the site, a sensitivity classification for the area can be defined for each. **Tables 2 to 4** indicate the method used to determine the sensitivity of the area for dust soiling, human health and ecological impacts, respectively.

For trackout, as per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 19]**, it is only considered necessary to consider trackout impacts up to 50 m from the edge of the road.

Table 2: Sensitivity of the area to dust soiling effects on people and property

Receptor sensitivity	Number of receptors	Distances from the source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 3: Sensitivity of the area to human health impacts

Receptor sensitivity	Annual mean PM ₁₀ concentration	Number of receptors	Distances from the source (m)			
			<20	<50	<100	<250
High	>32 µg/m ³	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m ³	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m ³	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m ³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m ³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

Table 4: Sensitivity of the area to ecological impacts

Receptor sensitivity	Distances from the source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2C: Defining the Risk of Impacts

The final step is to use both the dust emission magnitude classification with the sensitivity of the area, to determine a potential risk of impacts for each construction activity, before the application of mitigation. **Tables 5 to 8** indicate the method used to assign the level of risk for each construction activity.

Table 5: Risk of dust impacts from demolition

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 6: Risk of dust impacts from earthworks

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 7: Risk of dust impacts from construction

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 8: Risk of dust impacts from trackout

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

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