

# Springwell Solar Farm

## Preliminary Environmental Information Report

Volume 1  
Chapter 5: Air Quality

Phase 2 consultation  
Springwell Energyfarm Ltd



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## 5. Air Quality

### 5.1. Introduction

- 5.1.1. This chapter presents the preliminary environmental information and a preliminary assessment of the likely significant environmental effects arising from the construction and decommissioning of the Proposed Development upon air quality.
- 5.1.2. As proposed in the EIA Scoping Report and agreed through the Scoping Opinion received, impacts during operation (including maintenance) have not been considered within this preliminary environmental assessment. Refer to **Section 5.2** below for further detail.
- 5.1.3. This chapter is intended to be read as part of the wider Preliminary Environmental Information Report (PEIR) with particular reference to the following appendices in **Volume 3**:
  - **Appendix 5.1** – Air Quality Method Statement; and
  - **Appendix 5.2** – Response on Air Quality Method Statement.

### 5.2. Consultation, scope and study area

#### *Consultation undertaken to date*

- 5.2.1. An EIA Scoping Report, as provided in **Appendix 4.1**, setting out the proposed air quality assessment scope and methodology for the Proposed Development, was submitted to the Planning Inspectorate in March 2023. A Scoping Opinion, as provided in **Appendix 4.2**, was issued by the Planning Inspectorate on behalf of the Secretary of State in May 2023. **Appendix 4.3** provides responses to comments relating to air quality in the Scoping Opinion and details how these have been addressed in this preliminary assessment.
- 5.2.2. A method statement, as provided in **Appendix 5.1**, detailing the proposed air quality assessment scope and methodology (as presented in the EIA Scoping Report) was submitted to North Kesteven District Council and Lincolnshire County Council to seek their agreement on the proposed approach to the air quality assessment. A qualitative assessment based on the Institute of Air Quality Management's (IAQM) 'Guidance of the Assessment of Dust from Demolition and Construction' (IAQM, 2023)<sup>1</sup> to assess the potential dust impacts during construction and decommissioning, and a screening level qualitative assessment with reference to the Environmental Protection UK (EPUK) and IAQM 'Land-Use Planning and Development Control: Planning for

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<sup>1</sup> Guidance of the Assessment of dust from demolition and construction (2023). Available online: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-dust-2023-BG-v6-amendments.pdf>

Air Quality' (2017)<sup>2</sup> to assess the potential impacts of traffic exhaust emissions during construction and decommissioning, have been proposed in the method statement. Given the nature of the Proposed Development, an operational phase assessment has been proposed to be scoped out of further assessment. An email response, as provided in **Appendix 5.2**, was received from North Kesteven District Council on behalf of North Kesteven District Council and Lincolnshire County Council in August 2023, stating acceptance of the suggested assessment approach.

### ***Scope of the assessment***

- 5.2.3. This section updates the scope of assessment and confirms, and where necessary updates, the evidence base for scoping out receptors/matters following further iterative assessment and consideration of the Scoping Opinion.
- 5.2.4. A qualitative screening level assessment of the construction and decommissioning phase traffic impacts has been carried out as part of this preliminary assessment, with reference to the 2017 EPUK-IAQM guidance.
- 5.2.5. Details of the construction and decommissioning phase activities, including the scale of the anticipated works and plant and equipment to be used are not available at this preliminary assessment stage. Assessment of the dust emissions arising from construction and decommissioning activities will be conducted with reference to the IAQM 2023 guidance and reported in the ES. This preliminary assessment, however, provides commentary on predicted effects for these elements.

### **Receptors/matters scoped out of further assessment**

- 5.2.6. **Table 5.1** presents the matters that are scoped out of further assessment, together with appropriate justification. Where a change has occurred to the approach proposed within the EIA Scoping Report, this is clearly stated and justified.

**Table 5.1 Receptor/matters scoped out of further assessment**

Receptor/ matter	Phase	Justification	Change to the approach proposed in the EIA Scoping Report
Dust and particulate matter emission resulting from the Site activities (operation of the	Operation	Given the nature of the Proposed Development, no site activities resulting in significant emissions to air quality are anticipated during operation, and	No change – this matter was proposed to be scoped out of further assessment within the EIA Scoping

<sup>2</sup> Land-use Planning & Development Control: Planning for Air Quality (2017). Available online: <https://iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>

Receptor/ matter	Phase	Justification	Change to the approach proposed in the EIA Scoping Report
Proposed Development and maintenance activities) and road traffic exhaust emissions during operation		there will only be limited movement of vehicles to the Site for maintenance.	Report and the Scoping Opinion has agreed with this approach.
Dust and particulate matter emissions resulting from demolition works	Construction	There are no demolition works proposed during the construction phase.	No change – this matter was proposed to be scoped out of further assessment within the EIA Scoping Report and the Scoping Opinion has agreed with this approach.

**Receptors/matters scoped into further assessment**

5.2.7. **Table 5.2** presents the matters that are scoped into further assessment, together with appropriate justification. Where a change has occurred to the approach proposed within the EIA Scoping Report, this is clearly stated and justified.

**Table 5.2 Receptor/matters scoped into further assessment**

Receptor/matter	Phase	Justification	Change to the approach proposed in the EIA Scoping Report
Dust and particulate matter emissions resulting from the Site activities (demolition (during decommissioning phase only), earthworks, construction and trackout), including the operation of the	Construction and decommissioning	Impacts on sensitive receptors that are located up to 250m from the Site will be assessed. A qualitative, desk-based assessment of the site activities (earthworks, construction and trackout) is proposed to identify the type of mitigation required.	No change – this matter was proposed to be scoped into further assessment within the EIA Scoping Report and the Scoping Opinion has agreed with this approach.

Receptor/matter	Phase	Justification	Change to the approach proposed in the EIA Scoping Report
construction equipment		The operation of the site equipment and machinery during construction will also result in emissions to the atmosphere of exhaust gases. A qualitative, desk-based assessment is proposed to identify the type of mitigation required.	
Traffic exhaust emissions (including emissions haulage/construction vehicles and vehicles used for workers' trips to and from the Site)	Construction and decommissioning	A screening level qualitative assessment is proposed. The geographical extent of the study area is determined by the receptors close to roads predicted by the traffic assessment as likely to experience a significant change in traffic flows.	No change - this matter was proposed to be scoped into further assessment within the EIA Scoping Report and the Scoping Opinion has agreed with this approach.

**Extent of the study area**

- 5.2.8. Based on the IAQM 2023 guidance, the study area for the construction and decommissioning phase assessments for sensitive human receptors for earthworks and general construction activities is up to 250m from the Site boundary. For trackout<sup>3</sup> activities, the study area is up to 50m from the edge of the roads likely to be affected by trackout. The study area for sensitive ecological receptors for earthworks and general construction activities is up to 50m from the Site boundary.
- 5.2.9. The study area for the assessment of traffic exhaust emissions is determined by the receptors close to roads predicted by the traffic assessment as likely to experience a significant change in traffic flows, which comprises B1202, B1188, B1191, A15 and a small

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<sup>3</sup> Trackout is 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.

number of local minor roads (refer to **Chapter 12: Traffic and Transport** for further details).

### 5.3. Legislative framework, planning policy and guidance

#### *Relevant legislation*

5.3.1. Legislation relevant to the assessment of air quality comprises the following:

- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 (Volume 1) (Volume 2);
- The Clean Air Strategy 2019;
- 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;
- Air Quality (England) Regulations 2000;
- Air Quality (England) (Amendment) Regulations 2022;
- Air Quality Standards Regulations 2010;
- Air Quality Standards (Amendment) Regulations 2016;
- The Environment Act 1995;
- The Environment Act 2021; and
- The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

#### *Relevant Planning Policy*

5.3.2. Planning Policy relevant to air quality comprises the following:

- Overarching National Policy Statement for Energy (NPS EN-1) (2011)<sup>4</sup> provides the basis for decisions regarding nationally significant energy infrastructure. Section 5.2 outlines the planning policy for air quality, including guidance on undertaking relevant parts of the EIA.
- Draft Overarching National Policy Statement for Energy (NPS EN-1) (2023)<sup>5</sup> - Section 5.2 outlines the planning policy for air quality, including guidance on undertaking relevant parts of the EIA.
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2011)<sup>6</sup> sets out the policies relating to electricity generation from renewable sources of

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<sup>4</sup> Overarching National Policy Statement for Energy (EN-1) (2011). Available online:

<https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>

<sup>5</sup> Draft National Policy Statement for Energy (EN-1) (2023). Available online:

<https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-revisions-to-national-policy-statements>

<sup>6</sup> National Policy Statement for Renewable Energy (EN-3) (2011). Available online:

<https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>

energy. However, solar farms are not explicitly included within the document.

- Draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023)<sup>7</sup> - Section 3.10 gives specific consideration to solar development including assessment of traffic and transport impacts.
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2011)<sup>8</sup> does not contain requirements relevant to air quality assessment.
- Draft National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023)<sup>9</sup>. The Draft NPS EN-5 does not introduce any new content with regards to air and solar energy developments.
- National Planning Policy Framework (NPPF) (September 2023)<sup>10</sup>; and
- Central Lincolnshire Joint Strategic Planning Committee, Central Lincolnshire Local Plan (2023)<sup>11</sup> including the following policies related to air quality:
  - Policy S14: Renewable Energy; and
  - Policy S53: Design and Amenity.

### ***Applicable guidance***

5.3.3. The following guidance documents have been used during the preparation of this preliminary assessment:

- IAQM, Guidance of the Assessment of Dust from Demolition and Construction, v2.1, 2023;
- EPUK and IAQM, Land-Use Planning and Development Control: Planning for Air Quality, 2017; and
- Department for Environment, Food and Rural Affairs (Defra), Local Air Quality Management (LAQM) Technical Guidance (TG.22), 2022.

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<sup>7</sup> Draft National Policy Statement for Renewable Energy (EN-3) (2023). Available online: <https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-revisions-to-national-policy-statements>

<sup>8</sup> National Policy Statement for Electricity Networks Infrastructure (EN-5) (2011). Available online: [1942-national-policy-statement-electricity-networks.pdf \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49422/national-policy-statement-electricity-networks.pdf)

<sup>9</sup> Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023). Available online: [EN-5 Electricity Networks National Policy Statement \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/114422/en-5-electricity-networks-national-policy-statement.pdf)

<sup>10</sup> National Planning Policy Framework (2023). Available online: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

<sup>11</sup> Central Lincolnshire Local Plan (2023). Available online: <https://www.n-kesteven.gov.uk/central-lincolnshire/adopted-local-plan-2023>



## 5.4. Methodology

### *Data sources to inform baseline characterisation*

5.4.1. A desk-based baseline air quality review has been undertaken to establish existing air quality conditions within the study area. Information on air quality has been gathered from the following sources:

- Air Quality Annual Status Report (ASR) published by North Kesteven District Council;
- Magic Map available online by Defra; and
- Estimated background air quality data from background maps published by Defra.

### *Surveys to inform baseline characterisation*

5.4.2. Latest local air quality monitoring data is publicly available and therefore, no on-site air quality monitoring, survey or site visits have been undertaken to inform the baseline characterisation at this stage.

### *Design assumptions*

5.4.3. **Chapter 2: Description of the Proposed Development** details the preliminary design principles of the Proposed Development components as they are currently known. Preliminary parameter plans, which define the broad extents within which development can take place, are presented in the following figures within **Volume 2**:

- **Figure 2.3** – Zonal Masterplan;
- **Figure 2.4** – Indicative Height Parameters Plan;
- **Figure 2.5** – Indicative Green Infrastructure Parameters Plan; and
- **Figure 2.6** – Indicative Operational Access & Movement Parameters Plan.

5.4.4. **Chapter 4: Approach to EIA** sets out those elements of the Proposed Development for which optionality is present within the current design and sets out the scenario assessed for the purpose of this PEIR.

5.4.5. The preliminary design principles and preliminary parameter plans set out the reasonable ‘worst case scenario’ that has been assessed within this chapter.

### *Embedded mitigation measures*

5.4.6. This preliminary assessment has been based on the principle that measures have been ‘embedded’ into the design of the Proposed Development to remove potential significant effects as far as

practicable, for example by the considered placement of infrastructure. Embedded (primary) environmental mitigation measures that are considered to be an inherent part of the Proposed Development are detailed within **Table 4.4 of Chapter 4: Approach to EIA**. Those embedded mitigation measures relevant to this preliminary air quality assessment comprise the following:

- There will be a minimum 20m offset from the Proposed Development to locally designated wildlife sites.
- Existing woodlands and tree belts will be retained as far as reasonably practicable, whilst noting that it is possible that individual trees may need to be removed to facilitate construction. There will be a minimum 15m offset from built development to existing woodland.
- There will be a minimum 250m offset of central inverters from residential properties.

### **Assessment methodology**

- 5.4.7. The principal pollutants relevant to this preliminary assessment are considered to be Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), 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.
- 5.4.8. For this preliminary assessment, the potential effects of construction traffic impacts on air quality as a result of the Proposed Development are reported based on a screening level qualitative assessment, together with initial consideration of whether the effect is likely to be significant or not.
- 5.4.9. Details of the decommissioning phase are not fixed at this stage. However, it is expected that the decommissioning phase will be similar in nature to construction, albeit of a slightly shorter duration, with fewer road traffic movements and onsite equipment. The decommissioning phase is therefore less likely to cause an impact than the construction phase. As such, the construction phase is considered to be a worst-case proxy for the decommissioning phase.
- 5.4.10. At this preliminary assessment stage, detailed construction and decommissioning activities and plant lists have not been defined, and details to inform an assessment of dust emissions arising from construction and decommissioning activities are therefore not yet available to quantify impacts and their significance. A full assessment utilising significance criteria will be conducted and reported in the ES, based on the methodology presented in **Section 5.10**. However, this preliminary assessment does provide commentary on predicted effects for these elements.

**Traffic exhaust emissions - construction and decommissioning phases**

5.4.11. A screening level qualitative assessment for traffic exhaust emissions (construction phase only) has been undertaken as part of this preliminary assessment with reference to the 2017 EPUK-IAQM guidance, using professional judgement and by considering the following information which will form part of the final design of the Proposed Development, where available:

- The number of road traffic likely to be generated;
- The number and proximity of sensitive receptors to the Site and along the likely routes to be used by construction vehicles; and
- The likely duration and the nature of the construction/decommissioning activities undertaken.

5.4.12. **Table 5.3** below presents the 2017 EPUK-IAQM guidance screening criteria that is used for the preliminary assessment of construction phase traffic exhaust emissions.

**Table 5.3 Indicative criteria for requiring an air quality assessment**

The Development will	Indicative Criteria to Proceed to an Air Quality Assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors	A change of LDV flows of: -more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Areas (AQMAs) more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors	A Change of HDV flows of: -more than 25 AADT within or adjacent to an AQMA -more than 100AADT elsewhere.

5.4.13. Initial construction phase AADT data (two-way trips) has been provided by the project transport consultant assuming a 2026 construction year, as 2026 represents a reasonable worst-case year of assessment as traffic growth increases year on year and any percentage impacts would therefore reduce beyond 2026. Construction phase traffic data is provided in **Table 5.4** below.

**Table 5.4 Construction Phase Traffic Data**

Link	2026 Construction Traffic associated with the Proposed Development	
	All vehicles	HGVs
A15 (north of B1191)	640	80
A15 (south of B1191)	640	80

Link	2026 Construction Traffic associated with the Proposed Development	
	All vehicles	HGVs
B1191 (between RAF Digby and Ashby de la Launde)	880	80
B1191 (between Scopwick and RAF Digby)	880	80
B1188 (north of Scopwick)	640	80
B1188 (south of Digby)	640	80
A15 (south of Metheringham Heath Lane)	640	80
A15 (north of Leadingham)	640	80
B1188 (south of Scopwick)	640	80
A153 (directly north of junction with A17)	640	80
A17 (between A15 and A153)	640	80

5.4.14. For the purposes of this preliminary assessment, the decommissioning year is assumed to be 40 years from opening. As advised by the project transport consultant, this is considered to be too far into the future to be able to accurately predict traffic flows at that time. Therefore, it is considered reasonable to assume that traffic impacts during the decommissioning phase will be the same as or not greater than the construction phase.

## 5.5. Summary of baseline conditions

- 5.5.1. The Proposed Development is located within the administrative area of North Kesteven District Council. There are currently no AQMAs declared within the district.
- 5.5.2. According to the North Kesteven District Council 2022 Air Quality Annual Status Report (ASR), North Kesteven District Council undertook non-automatic NO<sub>2</sub> diffusion tube monitoring at 22 locations during 2021. There was no automatic air quality monitoring station within North Kesteven District Council area in 2021, and therefore PM<sub>10</sub> and PM<sub>2.5</sub> monitoring data is not available. The nearest monitoring location to the study area is a roadside NO<sub>2</sub> diffusion tube location (North Kesteven District Council ref: Ruskington) situated approximately 4.3km away from the Site. The measured annual average NO<sub>2</sub> concentrations at this diffusion tube site, for years 2017 - 2021, ranged between 10.6µg/m<sup>3</sup> and 14.7µg/m<sup>3</sup>, well below the annual mean NO<sub>2</sub> Air Quality Objective of 40µg/m<sup>3</sup>.
- 5.5.3. Estimated background air quality data is available from the UK-AIR website operated by Defra. The website provides estimated annual average background concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> on a

1km<sup>2</sup> grid basis from LAQM background maps. It is noted that estimated 2022 annual average background NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at the Site are well below the relevant Air Quality Objectives (NO<sub>2</sub>: 40µg/m<sup>3</sup>, PM<sub>10</sub>: 40µg/m<sup>3</sup>, PM<sub>2.5</sub>: 20µg/m<sup>3</sup>). Overall, air quality is considered to be good in the local area.

### *Sensitive receptors*

- 5.5.4. For the purpose of this preliminary assessment, human receptors have been identified within 250m of the Site, comprising:
- the village of Ashby de la Launde;
  - the village of Scopwick; and
  - the village of Blankney and RAF Digby.
- 5.5.5. Further detail on sensitive human receptors will be provided as part of the full assessment to be reported in the ES.
- 5.5.6. No designated ecological receptors (ancient woodlands, Local Nature Reserves (LNRs), National Nature Reserves (NNRs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SAC), Special Protection Areas (SPAs)) have been identified within 50m of the Site.
- 5.5.7. Non-statutory designated sites (Local Wildlife Sites (LWS)) have been identified within or adjacent to the Site, comprising:
- Blankney Brick Pit LWS;
  - Temple Road Verges, Welbourn to Brauncewell 2 LWS;
  - A15, Slate House Farm to Dunsby Pit Plantation 1 LWS;
  - A15, Green Man Road to Cuckoo Lane 2 LWS;
  - Bloxholm Wood LWS/Lincolnshire Wildlife Trust reserve;
  - Gorse Hill Lane LWS;
  - Gorse Lane LWS; and
  - Navenby Heath Road Verges LWS.

### *Future baseline*

- 5.5.8. **Table 5.5** presents the estimated annual average NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> background concentrations from the latest 2018 background concentrations map published by Defra for the grid square containing the Proposed Development for years 2023 (current year), 2026 (the proposed construction commencement year) and 2030 (the proposed operation year). In terms of the construction period, which is anticipated to be up to 48 months between 2026 and 2029, the worst-case year for estimated annual average pollutant concentrations is predicted to be 2026. Therefore, the estimated annual average pollutant concentrations for 2027, 2028 and 2029 have not been reported or considered in this preliminary assessment.

- 5.5.9. No exceedances of the annual average NO<sub>2</sub>, PM<sub>10</sub> or PM<sub>2.5</sub> Air Quality Standards (AQSs) are predicted for years 2023, 2026 and 2030. Background concentrations are in general predicted to fall with time, because of the reduction in emissions to air resulting from newer technology vehicles (for example, improved engine performance, electric vehicles and improvement in fuel quality). Therefore, background concentrations in future years are not expected to exceed their respective annual mean standards.
- 5.5.10. Air quality across the study area in the absence of the Proposed Development is anticipated to remain largely unchanged from the levels in the current baseline conditions.

**Table 5.5 Defra LAQM estimated background annual average NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at the Site (from 2018 base map)**

Assessment year	Estimated pollutant annual average NO <sub>2</sub> (µg/m <sup>3</sup> )	Annual concentrations derived from the LAQM support website Annual average PM <sub>10</sub> (µg/m <sup>3</sup> )	Average derived from the LAQM support website Annual average PM <sub>2.5</sub> (µg/m <sup>3</sup> )
2023 (current year (baseline))	6.74	15.25	8.15
2026 (proposed construction commencement)	6.18	14.95	7.91
2030 (proposed operation year)	5.90	14.89	7.87
Air Quality Standard (AQS)	40	40	20

Note: Presented concentrations for 1km<sup>2</sup> grid centred on 506500, 356500; approximate centre of the Site is 506382, 356551.

## 5.6. Likely effects, additional mitigation and residual effects

- 5.6.1. **Table 5.6** presents a summary of the predicted likely effects of the Proposed Development, additional mitigation and residual effects during construction and decommissioning.

### *Construction and Decommissioning phases*

**Table 5.6 Assessment of predicted likely effects, additional mitigation and residual effects during construction and decommissioning**

Receptor/matter	Likely effects/additional mitigation/residual effects	(secondary and tertiary)
Dust and particulate matter emissions resulting from the Site activities (demolition during decommissioning)	Likely effects	Construction and decommissioning works have the potential to release dust including fine particulate matter, and impact on nearby sensitive human and ecological receptors (i.e., LWS). Appropriate dust control measures can be highly effective for



Receptor/matter	Likely effects/additional mitigation/residual effects	(secondary and tertiary)
<p>phase only), earthworks, construction and trackout), including the operation of the construction equipment during construction and decommissioning phases</p>	<p>controlling emissions from potentially dust generating activities, and adverse effects can be greatly reduced or eliminated.</p> <p>The operation of site construction equipment and machinery will result in emissions to atmosphere of exhaust gases.</p> <p>Embedded mitigation as listed in <b>Section 5.4</b> above has already been included in the design.</p>	<p>Additional (secondary and tertiary) mitigation</p> <p>Construction phase site-specific dust mitigation measures will be based on the results of pre-mitigation dust impacts assessment (to be presented in the ES), which will also be applied for the decommissioning phase where relevant. General measures for different aspects such as construction site management, site monitoring and operating machinery will be proposed. Mitigation measures will be documented within and secured by the Outline Construction Environmental Management Plan and the Outline Decommissioning Environmental Management Plan.</p>
	<p>Likely residual effects</p>	<p>The effect of dust and particulate matter emissions and exhaust emissions from construction equipment and machinery during the construction phase is likely to be <b>not significant</b>, provided that dust controls, site management and dust mitigation measures are applied.</p> <p>Any effects on air quality during decommissioning will be temporary. The additional mitigation measures implemented during the construction phase will be also relevant for decommissioning phase and will be documented within and secured by the Outline Decommissioning Environmental Management Plan. With the implementation of the proposed additional mitigation measures, the residual effect during decommissioning is considered to be <b>not significant</b>.</p>
	<p>Likely effects</p>	<p>Construction and decommissioning traffic will comprise haulage/construction vehicles and</p>

Receptor/matter	Likely effects/additional mitigation/residual effects (secondary and tertiary)
Traffic exhaust emissions	<p>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 Site access and nearby road network.</p> <p>Initial construction traffic data provided by the project transport consultant, suggests that the Proposed Development will not generate HDVs flows exceeding the 2017 EPUK-IAQM guidance screening criteria (i.e., a change of HGVs of more than 100 AADT). The predicted LDVs generation marginally exceeds the 2017 EPUK-IAQM screening criteria (i.e., a change of LGVs of more than 500 AADT), but this does not necessarily suggest that a significant impact is likely. The 2017 EPUK-IAQM guidance notes that <i>'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'</i>.</p> <p>The traffic effects during construction will be limited to a relatively short period at each section/phase of the Proposed Development and will be along traffic routes employed by haulage/construction vehicles and workers. Baseline air quality is likely to be good and the annual mean NO<sub>2</sub> concentration at the Site is expected to be well below the objective. Therefore, it is considered highly unlikely that the additional traffic emissions as a result of the Proposed Development will cause a significant adverse impact on local air quality.</p> <p>Details of the decommissioning phase are not fixed at this stage, it is expected that the decommissioning phase will be similar in nature to construction, albeit of a slightly shorter duration, with fewer road traffic movements. As advised by the project transport consultant, it is considered reasonable to assume that traffic impacts during the decommissioning phase will be the same as or fewer than the construction</p>



Receptor/matter	Likely effects/additional mitigation/residual effects (secondary and tertiary)
	<p>phase. Based on the temporary nature of the decommissioning activities and low background pollutant concentrations in the vicinity of the Site, it is considered that traffic exhaust emission during decommissioning phase will not result in a significant adverse effect on air quality.</p>
<p>Additional (secondary and tertiary) mitigation</p>	<p>Any effects from traffic emissions on air quality will be temporary and can be suitably controlled by the employment of mitigation measures appropriate to the Proposed Development, which will be documented within and secured by the Outline Construction Traffic Management Plan (which will ultimately include a Construction Logistics Plan), the Outline Construction Environmental Management Plan and the Outline Decommissioning Environmental Management Plan. Potential mitigation could include junction and crossing improvements. The route of construction traffic will be documented within the Outline Construction Traffic Management Plan to be submitted in support of the DCO application (refer to <b>Chapter 12: Traffic and Transport</b> for further detail), including details and controls of roads crossings by HGVs and minimising use of sensitive routes by HGVs.</p>
<p>Likely residual effects</p>	<p>With mitigation measures in place, which will be documented within and secured by the Outline Construction Traffic Management Plan (which will ultimately include a Construction Logistics Plan), the Outline Construction Environmental Management Plan and the Outline Decommissioning Environmental Management Plan, the effect of traffic exhaust emissions during construction and decommissioning phases is predicted to be <b>not significant</b>.</p>

## 5.7. Opportunities for environmental enhancement

- 5.7.1. The Proposed Development is based on a clean energy source. At the time of writing, there are limited opportunities for environmental enhancement specifically related to air quality associated with the Proposed Development.

## 5.8. Intra-project combined effects

- 5.8.1. It is recognised that there is the potential for the interaction and combination of residual effects identified in other environmental chapters of this PEIR to affect certain receptors discussed in this preliminary air quality assessment. This could include, for example, effects on human receptors arising from air quality (dust), visual and noise impacts. The intra-project combined effects will be presented within the ES once relevant assessments are further progressed.
- 5.8.2. Inter-project effects are assessed and presented in **Chapter 15: Cumulative Effects**.

## 5.9. Difficulties and uncertainties

- 5.9.1. The information provided in this PEIR is preliminary and is based on the information available at the time of writing. A full assessment of likely significant effects will be reported in the ES.
- 5.9.2. The initial traffic data provided by the project transport consultant are based on worst case estimates at this stage. The traffic data will be updated in the ES based on the refined design of the Proposed Development.
- 5.9.3. Details of plant/equipment during the construction and decommissioning phases have not been defined. The plant selection and programme are expected to be defined during the preparation of the ES, as further information becomes available.

## 5.10. Further work to inform the ES

- 5.10.1. An assessment of the likely significant effects of construction and decommissioning phases dust<sup>12</sup> and particulate matter<sup>13</sup> at sensitive receptors will be undertaken following the IAQM 2023 guidance, using the available information for these phases of the Proposed Development provided by the project team and professional judgement.
- 5.10.2. The IAQM 2023 guidance makes reference to the use of professional judgement when assessing the risks of dust impacts from construction and decommissioning activities. Owing to this, professional judgement will be used when determining whether a risk is considered to be significant or not for the purpose of the construction and decommissioning phase assessment.
- 5.10.3. The assessment will consider the risk of potential dust and particulate matter effects from the following three sources: earthworks, general construction activities and trackout. It will take into account the nature and scale of the activities undertaken for each source and the sensitivity of the area to increases in dust and particulate matter levels to assign a level of risk. **Table 5.7** and **Table 5.8** below indicate the scale of impact magnitude and the

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<sup>12</sup> Dust refers to all airborne particulate matter (and is synonymous with the definition of TSP).

<sup>13</sup> Particulate matter refers to particles suspended in ambient air.

receptor sensitivity respectively that will be used in undertaking the construction and decommissioning phase assessment. Dust risks will be described in terms of low, medium or high as shown in **Table 5.9**. Once the level of risk has been ascertained, the site-specific mitigation proportionate to the level of risk will be identified. The assessment determines the significance of any residual effects once the pre-additional mitigation effects have been determined and appropriate additional mitigation measures have been identified.

**Table 5.7 Scale of magnitude for dust emission impacts (from IAQM 2023 Guidance)**

Activity	Magnitude	Description
Earthworks	Large	Total site area >110,000m <sup>2</sup> , potentially dusty soil type (e.g., clay), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height.
	Medium	Total site area 18,000 – 110,000m <sup>2</sup> , moderately dusty soil type (e.g., silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 4 – 6m in height.
	Small	Total site area <18,000m <sup>2</sup> , soil type with large grain size (e.g., sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4m in height.
Construction	Large	Total building volume >75,000m <sup>3</sup> , on site concrete batching, sandblasting.
	Medium	Total building volume 12,000 – 75,000m <sup>3</sup> , potentially dusty construction material (e.g., concrete), piling, on site concrete batching.
	Small	Total building volume <12,000m <sup>3</sup> , construction material with low potential for dust release (e.g., metal cladding or timber).
Trackout	Large	>50 HDV (>3.5t) trips in any one day, potentially dusty surface material (e.g., high clay content), unpaved road length >100m.
	Medium	20 – 50 HDV (>3.5t) trips in any one day, moderately dusty surface material (e.g., high clay content), unpaved road length 50 – 100m.
	Small	<20 HDV (>3.5t) trips in any one day, surface material with low potential for dust release, unpaved road length <50m.

**Table 5.8 Scale of receptor sensitivity (from IAQM 2023 Guidance)**

Sensitivity of area	Dust soiling	Human receptors	Ecological receptors
High	<p>Users can reasonably expect an enjoyment of a high level of amenity. The appearance, aesthetics or value of their property would be diminished by soiling. 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. 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 PM<sub>10</sub> (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) 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 preliminary assessment.</p>	<p>Locations with an international or national designation and the designated features may be affected by dust soiling. 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. Examples include a Special Area of Conservation (SAC) 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 not reasonably expect to enjoy the same level of amenity as in their home. The appearance, aesthetics or value of their property could be diminished by soiling.</p>	<p>Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed</p>	<p>Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown. Locations with a national designation where the features may be affected by dust deposition. Example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.</p>

Sensitivity of area	Dust soiling	Human receptors	Ecological receptors
	<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. Examples include parks and places of work.</p>	<p>for eight hours or more in a day). Examples include office and shop workers, but will generally not include workers occupationally exposed to PM<sub>10</sub>, as protection is covered by Health and Safety at Work legislation.</p>	
<p>Low</p>	<p>The enjoyment of amenity would not reasonably be expected. Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling. There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Examples include playing fields, farmland (unless commercially sensitive horticultural), footpaths, short term car parks and roads.</p>	<p>Locations where human exposure is transient. Indicative 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. Example is a local Nature Reserve with dust sensitive features.</p>

**Table 5.9 Level of effects for dust emission impacts (from IAQM 2023 Guidance)**

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

5.10.4. Full assessments of the dust emissions arising from construction and decommissioning activities will be conducted with reference to the IAQM 2023 guidance to inform the ES.



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