



XLINKS MOROCCO-UK POWER PROJECT

Preliminary Environmental Information Report

Volume 2, Chapter 7: Air Quality



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Glossary

Term	Meaning
Air Quality Management Area	An area declared by a local authority where its review and assessment of air quality shows that an air quality objective is likely to be exceeded.
Alverdiscott Substation Connection Development	The development required at the existing Alverdiscott Substation site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be confirmed by National Grid Electricity Transmission.
Annoyance (dust)	Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance, as defined by the Institute of Air Quality Management.
Applicant	Xlinks 1 Limited
Baseline	The status of the environment without the Proposed Development in place.
Construction	Any activity involved with the provision of a new structure (or structures), its modification or refurbishment.
Construction Environmental Management Plan	A document detailing the overarching management principles for construction, which includes construction-related environmental management measures, pollution prevention measures, the selection of appropriate construction techniques and monitoring processes.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Cumulative Effects	The combined effect of the Proposed Development in combination with the effects from other proposed developments, on the same receptor or resource.
Deposited Dust	Dust that has settled out onto a surface after having been suspended in air.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Dust	Solid particles suspended in air or settled out onto a surface after having been suspended in air.
Earthworks	Covers the processes of soil-stripping, ground-levelling, excavation, and landscaping, as defined by the Institute of Air Quality Management.
Effect	The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Impact	Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).
Inter-related effects	Multiple effects on the same receptor as a result of the Proposed Development. These occur when a series of the same effect acts on a receptor over time to produce a potential additive effect or where a number of separate effects, such as noise and habitat loss, affect a single receptor.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at

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	Cornborough Range, Devon, between Mean Low Water Springs and the Transition Joint Bay inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
Proposed Development	The element of the Xlinks Morocco-UK Power Project within the UK, which includes the offshore cables (from the UK Exclusive Economic Zone to landfall), landfall site, onshore Direct Current and Alternating Current cables, converter stations, road upgrade works and, based on current assumptions, the Alverdiscott Substation Connection Development.
Proposed Development Draft Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Receptor	The element of the receiving environment that is affected.
Risk	The likelihood of an adverse event occurring.
Study area	This is an area which is defined for each environmental topic which includes the Proposed Development Draft Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Trackout	The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network, as defined by the Institute of Air Quality Management.

Acronyms

Acronym	Meaning
AIL	Abnormal Indivisible Loads
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
CEA	Cumulative Effects Assessment
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DMP	Dust Management Plan
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
HDV	Heavy Duty Vehicle
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management

Acronym	Meaning
LDV	Light Duty Vehicle
MLWS	Mean Low Water Springs
NPPF	National Planning Policy Framework
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
PM	Particulate Matter
PPG	Planning Policy Guidance
SSSI	Sites of Special Scientific Interest
UK	United Kingdom
WHO	World Health Organisation

Units

Unit	Definition
km	Kilometre
m	Metre
m ²	Square metre
m ³	Cubic metre
mph	Miles per hour
nm	Nautical mile
µg.m ⁻³	Microgram per cubic metre

7 AIR QUALITY

7.1 Introduction

- 7.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) work undertaken to date for the United Kingdom (UK) elements of the Xlinks Morocco-UK Power Project. For ease of reference, the UK elements of the Xlinks Morocco-UK Power Project are referred to in this chapter as the 'Proposed Development'.
- 7.1.2 This chapter considers the potential impacts and effects of the Proposed Development on air quality during the construction, operation and maintenance and decommissioning phases. Specifically, it relates to the onshore elements of the Proposed Development landward of Mean High Water Springs.
- 7.1.3 In particular, this PEIR chapter:
- sets out the existing and future environmental baseline conditions, established from desk studies and consultation undertaken to date;
 - presents the potential environmental impacts and effects on all aspects of air quality arising from the Proposed Development, based on the information gathered and the analysis and assessments undertaken to date;
 - identifies any assumptions and limitations encountered in compiling the environmental information; and
 - highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.
- 7.1.4 The assessment presented is informed by the following technical chapters:
- Volume 2, Chapter 5: Traffic and Transport of the PEIR.
- 7.1.5 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR and any refinements in design will be reviewed and taken into account, where appropriate, in preparation of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate for development consent.

7.2 Legislative and Policy Context

Legislation

The Environment Act 1995

- 7.2.1 The Environment Act 1995, as amended by the Environment Act 2021, established the requirement for the Government and the devolved administrations to produce a National Air Quality Strategy for improving ambient air quality, the first being published in 1997 and having been revised several times since, with the latest published in 2007 (Department for Environment, Food and Rural Affairs (Defra), 2007).

7.2.2 The Environment Act 1995 established the UK system of Local Air Quality Management (LAQM), that requires local authorities to go through a process of review and assessment of air quality in their areas, identifying places where health-based objectives are not likely to be met, then declaring Air Quality Management Areas (AQMAs) and putting in place Air Quality Action Plans to improve air quality.

The Air Quality Standards Regulations 2010

7.2.3 The Air Quality Standards Regulations 2010, amended by The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020, sets limit values for ambient air concentrations for the main air pollutants: particulate matter (PM₁₀ and PM_{2.5}), nitrogen dioxide, sulphur dioxide, ozone, carbon monoxide, lead and benzene, certain toxic heavy metals (arsenic, cadmium and nickel) and polycyclic aromatic hydrocarbons.

7.2.4 These limit values are legally binding on the Secretary of State. The Government and devolved administrations operate various national ambient air quality monitoring networks to measure compliance and develop plans to meet the limit values.

7.2.5 The objective and limit values relevant to this development are set out in **Table 7.1**.

Table 7.1: Summary of Relevant Air Quality Limit Values and Objectives

Pollutant	Averaging Period	Objective/Limit Values	Not to be Exceeded More Than
Particulate Matter (PM ₁₀)	24 Hour	50 µg.m ⁻³	35 times per calendar year
	Annual*	40 µg.m ⁻³	-

*The annual limit is not allowed to be exceeded

Planning Policy Context

7.2.6 The Proposed Development will be located within the UK Exclusive Economic Zone (EEZ) offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters, with the onshore infrastructure located wholly within Devon, England. As set out in Volume 1, Chapter 1: Introduction of the PEIR, the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) has directed that elements of the Proposed Development are to be treated as development for which development consent is required under the Planning Act 2008, as amended.

National Policy Statements

7.2.7 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Proposed Development, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government’s policy for the delivery of major energy infrastructure (Department for Energy Security and Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security and Net Zero 2023b); and

- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security and Net Zero 2023c).

7.2.8 **Table 7.2** sets out key aspects from the NPSs which are relevant to the Proposed Development, with particular reference to the need for and approach to consenting such infrastructure.

Table 7.2: Summary of relevant NPS policy

Summary of NPS requirement	How and where considered in the PEIR
NPS EN-1	
<p>NPS EN-1 includes generic guidance on the assessment of air quality impacts for major energy projects:</p> <p><i>'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'</i> (paragraph 5.2.8 of NPS EN-1).</p> <p>This requires the Environmental Statement to describe:</p> <p><i>'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 emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied; and any potential eutrophication impacts.'</i> (paragraph 5.2.9 of NPS EN-1).</p>	<p>The potential air quality impacts which may arise during construction and decommissioning of the Proposed Development have been described and considered within this chapter. This chapter focuses on the potential impacts from dust generated during construction and decommissioning of the Proposed Development (see section 7.8 and section 7.10) and considers mitigation and residual effects. Mitigation measures provided as part of the Proposed Development are presented within section 7.7.</p> <p>The potential air quality impacts arising from construction, operation and maintenance, and decommissioning traffic have been scoped out of the air quality assessment, as estimated annual average daily traffic flows do not exceed relevant thresholds (see Table 7.8 for further details).</p>
<p>NPS EN-1 and NPS EN-3 refer to NPS EN-5 as the primary guidance document in relation to onshore grid connection infrastructure. Air quality is not identified as a key impact for such infrastructure within either NPS EN-5 or the offshore wind farm section of NPS EN-3.</p>	<p>The potential air quality impacts which may arise during construction and decommissioning of the Proposed Development have been described and considered within this PEIR chapter. This chapter focuses on the potential impacts from dust generated during construction and decommissioning of the Proposed Development (see section 7.8 and section 7.10) and considers mitigation and residual effects. Mitigation measures provided as part of the Proposed Development are presented within section 7.7.</p>
NPS EN-3	
<p>EN-3 states that <i>'The applicant should assess the effects of the offshore transmission and any associated infrastructure on the marine, coastal and onshore environment.'</i> (EN-3 paragraph 2.8.58). This guidance applies to all the disciplines within the EIA and is not specific to air quality impact assessment.</p>	<p>This air quality assessment considers potential impacts of dust on sensitive receptors located within the air quality study area (see section 7.8 and section 7.10).</p>

The National Planning Policy Framework

7.2.9 The National Planning Policy Framework (NPPF) was published in 2012 and updated in 2018, 2019, 2021 and 2023 (Department for Levelling Up, Housing and Communities, 2023). The NPPF sets out the Government’s planning policies for England.

7.2.10 **Table 7.3** sets out a summary of the NPPF policies relevant to this chapter.

Table 7.3: Summary of NPPF requirements relevant to this chapter

Policy	Key provisions	How and where considered in the PEIR
Promoting sustainable transport	<p><i>'The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.'</i> (Paragraph 109).</p>	<p>One of the mitigation measures listed in Table 7.22 is to implement a Travel Plan that supports and encourages sustainable travel. The potential air quality impacts arising from construction, operation and maintenance, and decommissioning traffic have been scoped out of the air quality assessment, as estimated annual average daily traffic flows do not exceed relevant thresholds (see Table 7.8 for further details).</p>
Conserving and enhancing the natural environment	<p><i>'Planning policies and decisions should contribute to and enhance the natural and local environment by:</i> <i>...Preventing new and existing development from contributing to, 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; ...'</i> (Paragraph 180)</p> <p><i>'Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.'</i> (Paragraph 192)</p>	<p>A dust risk assessment has been undertaken to determine the impacts on the local environment in section 7.8 of this PEIR chapter. Section 7.7, details the mitigation measures proportionate to the risk level of the Proposed Development. The potential air quality impacts arising from construction, operation and maintenance, and decommissioning traffic have been scoped out of the air quality assessment, as estimated annual average daily traffic flows do not exceed relevant thresholds (see Table 7.8 for further details). There are no AQMAs or Clean Air Zones situated within the air quality study area.</p>

7.2.11 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2021) supports the NPPF and provides guidance across a range of topic areas.

7.2.12 The PPG was issued on-line on 6 March 2014 and is updated periodically by government as a live document. The last major update was on 1 November 2019. The Air Quality section of the PPG describes the circumstances when air quality, odour and dust can be a planning concern, requiring assessment.

7.2.13 The PPG advises that whether or not air quality is relevant to a planning decision will depend on the Proposed Development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where

it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the Proposed Development would be particularly sensitive to poor air quality in its vicinity. The PPG states that when deciding whether air quality is relevant to a planning application, considerations could include whether the development would:

- *‘Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the Proposed Development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*
- *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;*
- *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
- *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*
- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value.’ (Paragraph 006)*

7.2.14 The PPG provides advice on how air quality impacts can be mitigated and notes the following.

‘Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.’ (paragraph 008)

Local Planning Policy

7.2.15 The onshore elements of the Proposed Development are located within the administrative area of Torrridge District Council. The relevant local planning policies applicable to air quality based on the extent of the study areas for this assessment are summarised in **Table 7.4**.

Table 7.4: Summary of local planning policy relevant to this chapter

Policy	Key provisions	How and where considered in the PEIR
The North Devon and Torridge Local Plan 2011-2031 (North Devon Council and Torridge District Council, 2018)		
Policy DM02: Environmental Protection	The Policy DM02 highlights that development will be supported where it does not result in unacceptable impacts to atmospheric pollution, resulting from gas or particulates, including odour, dust, fumes, grit, smoke or dirt. Furthermore, the policy states that: <i>'Development and traffic proposals that help to deliver measures identified within a Local Air Quality Action Plan or improved overall air quality will be supported.'</i>	A dust risk assessment has been undertaken to determine the impacts on the local environment in section 7.8 of this PEIR chapter. Mitigation measures have also been listed to ensure that the risk of adverse dust effects is reduced to a level categorised as 'not significant' (see section 7.7).

7.3 Consultation and Engagement

- 7.3.1 In January 2024, the Applicant submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction and operational phases of the Proposed Development. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these areas.
- 7.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 7 March 2024. Key issues raised during the scoping process specific to air quality are listed in **Table 7.5**, together with details of how these issues have been addressed within the PEIR.

Table 7.5: Summary of Scoping Responses

Comment	How and where considered in the PEIR
Planning Inspectorate	
<i>'Several aspect chapters in the Scoping Report refer to fixed distance study areas with no explanation as to why these have been selected. The ES should ensure the study area for each aspect reflects the Proposed Development's Zol and the impact assessment should be based on the Zol from the Proposed Development with reference to potential effect pathways. Clear justification should be provided to support any distances applied.'</i>	The air quality study area is provided within paragraphs 7.4.5 to 7.4.10 and is based upon the guidance set out within the Institute of Air Quality Management (IAQM) (2024). The assessment of construction (section 7.8) and decommissioning (section 7.10) are based on the air quality study area.
<i>'It is unclear from the Scoping Report what potential effects on statutory designated sites are to be included in the impact assessment. The Inspectorate notes the statement that the Proposed Development would not directly affect the Torridge Estuary SSSI/LNR and would avoid its primary estuarine habitats by drilling under using HDD. At present there is no information in the Scoping Report to</i>	With regards to dust, the impacts have been considered on all designated ecological sites within the air quality study area, as detailed within paragraph 7.4.9 . The air quality study area is provided in Volume 2, Figure 7.1. Air quality impacts on the Kynoch's Foreshore Local Nature Reserve (LNR) is included within this PEIR chapter.

Comment	How and where considered in the PEIR
<p>confirm the likely proximity of construction activity to the designated sites and their interest features, such as the likely location of HDD exit/entry points, compounds, and haul roads.</p> <p>The SSSI and LNR are designated for their important estuarine habitats, plants and bird species. The Inspectorate considers there is the potential for likely significant effects during construction (and decommissioning) to these sites and their features from potential changes to air quality, including dust deposition, changes to water quality, including proximity of HDD and accidental release of drilling fluids such as bentonite, and disturbance to species. The ES should include an assessment of such impacts to designated sites and features, where likely effects could occur.'</p>	<p>The Mermaid's Pool to Rowden Gut Site of SSSI is not sensitive and the Taw-Torridge Estuary SSSI is situated outside of the air quality study area as detailed within paragraph 7.4.9. As such, these ecological sites are not considered in the assessment.</p>
<p>'As per the Inspectorate's comments at ID 3.7.1 and ID 3.7.2 above, it is considered that insufficient justification has been provided in the Scoping Report and the Inspectorate does not agree to scope this matter out at this stage. The Inspectorate would expect the ES to provide a detailed explanation of the likely construction emission to justify not undertaking further assessment. The ES should include an assessment of air emissions during construction on sensitive ecological receptors, such as habitats and species of the LNR, during the construction phase where likely significant effects could occur or provide evidence that this matter can be scoped out.'</p>	<p>Details on the anticipated vehicle movements are included within Volume 2, Chapter 5: Traffic and Transport, of the PEIR.</p> <p>The results of the transport assessment (detailed in Volume 2, Chapter 5: Traffic and Transport) indicates that the relevant thresholds are not expected to be exceeded for any individual road during the construction, operation and maintenance, and decommissioning phases.</p> <p>As such, the impact on human and ecological receptors arising from air emissions generated by vehicles has been scoped out, as detailed within Table 7.8.</p>
<p>'The ES should detail the type and number of anticipated vehicle movements during all phases of the Proposed Development and explain the assumptions upon which these have been established. The Inspectorate would expect the ES to confirm whether thresholds would/would not be exceeded to justify scoping out this matter from further assessment.'</p>	
<p>'The ES should identify sensitive ecological receptors and any potential effect pathways from air quality changes, including dust, and include an assessment of any likely significant effects. This can be included in the Ecology and Nature Conservation ES chapter with reference to information in the air quality assessment.'</p>	<p>With regards to dust, the impacts have been considered on all designated ecological sites as detailed within paragraph 7.4.9. The air quality study area is provided in Volume 2, Figure 7.1. Air quality impacts on the Kynoch's Foreshore Local Nature Reserve (LNR) is included within this PEIR chapter, and will be considered in the ES stage.</p>
<p>'The Inspectorate agrees that fugitive dust emissions associated with operation and maintenance of the Proposed Development are unlikely to result in significant effects, and this matter can be scoped out of the ES.'</p>	<p>Impacts arising from fugitive dust emissions associated with operation and maintenance have been scoped out of the air quality assessment as agreed with the Planning Inspectorate (see Table 7.8).</p>
<p>'The Scoping Report proposes to scope out onshore plant generated impacts on human and ecological receptors during operation and maintenance on the basis that the Proposed Development does not</p>	<p>Impacts arising from emissions from plant and stacks have been scoped out of the air quality assessment as agreed with the Planning Inspectorate (see Table 7.8).</p>

Comment	How and where considered in the PEIR
<p>include proposals for any onshore plant or stacks which could generate air emissions.</p> <p>On the basis that there are no stacks and provided no significant emissions are likely to arise from operational plant/stations, the Inspectorate agrees that this matter can be scoped out of the ES.'</p>	
<p>'The Inspectorate notes that this aspect chapter makes no reference to the proposed Alverdiscott Substation Connection Development (see comment at ID 2.1.5 above).'</p>	<p>The air quality study area is detailed within paragraphs 7.4.5 to 7.4.10, which includes the proposed Alverdiscott Substation Connection Development.</p>
<p>'The Inspectorate agrees that likely significant effects arising from residues and emissions (eg dust, pollutants, light, noise, vibration) are to be assessed in the relevant aspect chapters of the ES and a standalone aspect chapter for residues and emissions is not required.</p> <p>The Applicant's attention is however directed to the Inspectorate's comments in the relevant aspect chapters above with regards to residue and emission matters, for example lighting.'</p>	<p>The air quality chapter focuses on the potential impacts from dust and suspended particulate matter.</p>
<p>Natural England</p>	
<p>'The development site is within or may impact on the following Sites of Special Scientific Interest:</p> <ul style="list-style-type: none"> • Mermaid's Pool to Rowden Gut Site of Special Scientific Interest (SSSI) • Taw Torridge Estuary SSSI • Lundy SSSI <p>The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.'</p>	<p>With regards to dust, the impacts have been considered on all designated ecological sites within the study area, as detailed within paragraph 7.4.9. However, Mermaids Pool to Rowden Gut SSSI is a geological site and thus, not sensitive to dust. Lundy and Taw Torridge Estuary SSSIs are located outside of the air quality study area .</p>

7.3.3 Following scoping, consultation and engagement with interested parties specific to air quality has continued.

7.3.4 A summary of the key issues raised during consultation activities undertaken to date is presented in **Table 7.6**, together with how these issues have been considered in the production of this PEIR chapter.

Table 7.6: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR
May 2023.	Torridge District Council Environmental Protection Officer.	The Environmental Protection Officer agreed the methodology proposed was suitable and asked whether air quality assessment will be produced and available at the planning and process stage.	This chapter outlines the air quality assessment and follows the scope and methodology agreed with the council. This PEIR will be provided to the council for consultation.
February 2024	Torridge District Council Environmental Protection Officer.	Torridge District Council was contacted following the submission of the EIA	This chapter outlines the air quality assessment and follows the scope and

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR
		Scoping Report in preparation of the DCO submission. The Environmental Protection Officer was still in agreement with the proposed methodology.	methodology agreed with the council. This PEIR will be provided to the council for consultation.

7.4 Methodology

Relevant Guidance

7.4.1 The relevant guidance documents used in this assessment are listed below:

- Institute of Air Quality Management (IAQM) (2024) Guidance on the assessment of dust from demolition and construction.
- Environmental Protection UK (EPUK) & IAQM (January 2017) Land-Use Planning & Development Control: Planning for Air Quality.

Scope of the Assessment

7.4.2 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 7.5** and **Table 7.6**.

7.4.3 Taking into account the scoping and consultation process, **Table 7.7** summarises the issues considered as part of this assessment.

Table 7.7: Issues considered within this assessment

Activity	Potential effects scoped into the assessment
Construction Phase	
The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction activities.	Activities required for the construction of the Proposed Development (e.g., earthworks, vehicle track-out) would generate dust emissions which could result in dust soiling effects on human receptors, including people and property.
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite construction activities.	Activities required for the construction of the Proposed Development (e.g., earthworks, vehicle track-out) would generate dust emissions which could result in adverse effects on the health of human receptors.
The impact on ecological receptors arising from dust emissions generated by onsite construction activities.	There is only one Site of Special Scientific Interest (SSSI) within study area which has been designated for its geological features and therefore is not sensitive to air quality. However, there is a Local Nature Reserve (Kynoch’s Foreshore) within the study area
Decommissioning Phase	
The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite decommissioning activities.	Activities required for the decommissioning of the Proposed Development (e.g., earthworks, vehicle track-out) would generate dust emissions which could result

Activity	Potential effects scoped into the assessment
	in dust soiling effects on human receptors, including people and property.
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite decommissioning activities.	Activities required for the decommissioning of the Proposed Development (e.g., earthworks, vehicle track-out) would generate dust emissions which could result in adverse effects on the health of human receptors.
The impact on ecological receptors arising from dust emissions generated by onsite decommissioning activities.	There is only one SSSI within study area which has been designated for its geological features and therefore is not sensitive to air quality. However, there is a Local Nature Reserve (Kynoch’s Foreshore) within the study area

7.4.4 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in **Table 7.8**.

Table 7.8: Issues scoped out of the assessment

Potential Impact	Potential effects scoped out the assessment
Construction Phase	
The impact on ecological receptors arising from air emissions generated by vehicles during the construction phase.	The EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document (EPUK & IAQM, 2017) indicates that air quality assessments should include developments that increase annual average daily Light Duty Vehicle (LDV) traffic flows by more than 100 within or adjacent to an AQMA and more than 500 elsewhere. The results of the traffic and transport assessment (detailed in Volume 2, Chapter 5: Traffic and Transport of the PEIR) undertaken for this Proposed Development indicates that the aforementioned EPUK & IAQM thresholds are not expected to be exceeded for any individual road during the construction phase of this Proposed Development; therefore, construction-vehicle exhaust emissions have not been assessed specifically. The EPUK & IAQM states that: <i>‘If none of the criteria are met then there should be no requirement to carry out an air quality assessment for the impact of the proposed development on the local area, and the impacts can be considered to have insignificant effects.’</i>
The impact on human receptors arising from air emissions generated by vehicles during the construction phase.	
Operation and Maintenance	
The impact on ecological receptors arising from air emissions generated by vehicles during the operation and maintenance phase.	The EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document (EPUK & IAQM, 2017) indicates that air quality assessments should include developments that increase annual average daily LDV traffic flows by more than 100 within or adjacent to an AQMA and more than 500 elsewhere. The results of the traffic and transport assessment (detailed in detailed in Volume 2, Chapter 5: Traffic and Transport) undertaken for this Proposed Development indicates that the aforementioned EPUK & IAQM thresholds are not expected to be exceeded for any individual road during the operation and maintenance phase of this Proposed Development; therefore, operational-vehicle exhaust emissions have not been assessed specifically. The EPUK & IAQM states that: <i>‘If none of the criteria are met then there should be no requirement to carry out an air quality assessment for the impact of the proposed development on the local area, and the impacts can be considered to have insignificant effects.’</i>
The impact on human receptors arising from air emissions generated by vehicles during the operation and maintenance phase.	
The impact on human and ecological receptors (dust soiling and human health) arising from fugitive dust emissions generated during operation and maintenance of the	Activities associated with the operation and maintenance of the onshore elements of the Proposed Development are unlikely to generate dust. Therefore, the potential impact on human or ecological receptors arising from fugitive dust emissions generated during operation and maintenance of the onshore elements of the Proposed Development is unlikely to result in significant effects and thus, has been scoped out of the assessment for air quality.

Potential Impact	Potential effects scoped out the assessment
onshore elements of the Proposed Development.	
The impact on human and ecological receptors arising from air emissions generated by plants or stacks during operation and maintenance of the onshore elements of the Proposed Development.	The Proposed Development does not include proposals for any plant or emissions stacks which could give rise to air emissions during operation of the onshore elements of the Proposed Development. Therefore, the potential impact on human or ecological receptors arising from plant or stack emissions would not occur and would not result in significant effects and thus, has been scoped out of the assessment for air quality.
Decommissioning Phase	
The impact on ecological receptors arising from air emissions generated by vehicles during the decommissioning phase.	The EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document (EPUK & IAQM, 2017) indicates that air quality assessments should include developments that increase annual average daily LDV traffic flows by more than 100 within or adjacent to an AQMA and more than 500 elsewhere. The results of the traffic and transport assessment (detailed in detailed in Volume 2, Chapter 5: Traffic and Transport, of the PEIR) undertaken for this Proposed Development indicates that the aforementioned EPUK & IAQM thresholds are not expected to be exceeded for any individual road during the decommissioning phase of this Proposed Development; therefore, operational-vehicle exhaust emissions have not been assessed specifically. The EPUK & IAQM states that: <i>'If none of the criteria are met then there should be no requirement to carry out an air quality assessment for the impact of the proposed development on the local area, and the impacts can be considered to have insignificant effects.'</i>
The impact on human receptors arising from air emissions generated by vehicles during the decommissioning phase.	

Study Area

- 7.4.5 Guidance on the assessment of dust from demolition and construction (IAQM, 2024) indicates that there could potentially be annoyance dust and particulate matter (PM) with diameters of 10 micrometres or smaller (PM₁₀) effects on human health receptors located within 250 m of onsite construction activities and ecological receptors located within 50 m of onsite construction activities.
- 7.4.6 As such, the air quality study area has been defined with respect to construction dust and covers an area up to 250 m around the Onshore Infrastructure Area (which excludes the Abnormal Indivisible Load (AIL) routes), and 250 m from construction site entrances. In accordance with IAQM guidance (IAQM, 2024), receptors are also considered within 20 m, 50 m, 100 m, and 250 m in the air quality assessment.
- 7.4.7 With respect to the AIL routes, the air quality study area covers 50 m from the edge of the roads, up to 250 m from the site entrances, in line with the IAQM (2024) guidance. Beyond 250 m from construction site entrances, the AIL routes are not considered as the impact of trackout declines with distance from the site.
- 7.4.8 To note, the study area used within this assessment differs from the study areas proposed within the Scoping Report, as it has decreased from 350 m to 250 m. This reflects the updates made to the IAQM guidance in 2024 (IAQM, 2024).
- 7.4.9 For sensitive ecological receptors, the corresponding distances are 50 m in both cases. The Mermaid’s Pool to Rowden Gut Site of SSSI is within 50 m of the Onshore Infrastructure Area but this has been designated for its geological features. As such, it is not sensitive to air pollution. Kynoch’s Foreshore LNR is

within 50 m of the Onshore Infrastructure Area and is considered within the air quality assessment.

- 7.4.10 The location and geographic extent of the study area used to inform the air quality assessment is presented in Figure 7.1 (see Volume 2, Figures).

Methodology for Baseline Studies

Desk Studies

- 7.4.11 The background concentration often represents a large proportion of the total pollution concentration, so it is important that the background concentration selected for the assessment is realistic. The PPG and EPUK & IAQM guidance highlight public information from Defra and local monitoring studies as potential sources of information on background air quality.
- 7.4.12 Local Air Quality Management Technical Guidance (TG22) (Defra, 2022) recommends that Defra mapped concentration estimates are used to inform background concentrations in air quality modelling and states that: *'Where appropriate these data can be supplemented by and compared with local measurements of background, although care should be exercised to ensure that the monitoring site is representative of background air quality'*.
- 7.4.13 Baseline air quality has been characterised by drawing on information from the following public sources:
- Defra maps (Defra, 2018), which show estimated pollutant concentrations across the UK in 1 km grid squares; and
 - Published results of local authority Review and Assessment studies of air quality (Torridge District Council Annual Status Report 2020), including local monitoring and modelling studies.

Risk Assessment Methodology

Overview

- 7.4.14 No statutory or official numerical air quality criterion for dust annoyance has been set at a UK, European or World Health Organisation (WHO) level. Construction dust assessments have tended to be risk based, focusing on the appropriate measures to be used to keep dust impacts at an acceptable level.
- 7.4.15 The IAQM dust guidance aims to estimate the impacts of both PM₁₀ and dust through a risk-based assessment procedure. The IAQM dust guidance document states: *'The impacts depend on the mitigation measures adopted. Therefore the emphasis in this document is on classifying the risk of dust impacts from a site, which will then allow mitigation measures commensurate with that risk to be identified.'* (Page 4, IAQM 2024).
- 7.4.16 The IAQM dust guidance provides a methodological framework for the assessment but notes that professional judgement is required to assess effects: *'This is necessary, because the diverse range of projects that are likely to be subject to dust impact assessment means that it is not possible to be prescriptive*

as to how to assess the impacts. Also a wide range of factors affect the amount of dust that may arise, and these are not readily quantified.'

- 7.4.17 Consistent with the recommendations in the IAQM dust guidance, a risk-based assessment has been undertaken for the Proposed Development, using the well-established source-pathway-receptor approach:
- The dust impact (the change in dust levels attributable to the development activity) at a particular receptor will depend on the magnitude of the dust source and the effectiveness of the pathway (i.e., the route through the air) from source to receptor.
 - The effects of the dust are the results of these changes in dust levels on the exposed receptors, for example annoyance or adverse health effects. The effect experienced for a given exposure depends on the sensitivity of the particular receptor to dust. An assessment of the overall dust effect for the area as a whole has been made using professional judgement taking into account both the change in dust levels (as indicated by the Dust Impact Risk for individual receptors) and the absolute dust levels, together with the sensitivities of local receptors and other relevant factors for the area.
- 7.4.18 The dust risk categories that have been determined for each of the four activities (demolition, earthworks, construction and tracked out dust (referred to in the IAQM guidance as trackout) have been used to define the appropriate site-specific mitigation measures based on those described in the IAQM dust guidance. The guidance states that provided the mitigation measures are successfully implemented; the resultant effects of the dust exposure will normally be “not significant”.
- 7.4.19 Exhaust emissions from construction-related vehicles (contractors’ vehicles and Heavy Goods Vehicles (HGVs)), diggers, and other diesel-powered vehicles) are unlikely to have a significant impact on local air quality (IAQM, 2024) except for large, long-term construction sites. The EPUK & IAQM Land-Use Planning & Development Control: Planning For Air Quality document (EPUK and IAQM, 2017) indicates that air quality assessments should include developments that increase annual average daily Heavy Duty Vehicle (HDV) traffic flows by more than 25 within or adjacent to an AQMA and more than 100 elsewhere. The results of the traffic and transport assessment (detailed in Volume 2, Chapter 5: Traffic and Transport, of the PEIR) undertaken for this Proposed Development indicates that the aforementioned EPUK & IAQM thresholds are not expected to be exceeded for any individual road during the construction phase of this Proposed Development; therefore, construction-vehicle exhaust emissions have not been assessed specifically.
- 7.4.20 This assessment does not consider the air quality impacts of dust from any contaminated land or buildings. Contaminated land is considered within Volume 2, Chapter 4: Geology, Hydrogeology and Ground Conditions, of the PEIR.

Source

- 7.4.21 The IAQM dust guidance gives examples of the dust emission magnitudes for demolition, earthworks and construction activities and trackout. These example dust emission magnitudes are based on the Proposed Development, building volume, number of HDV movements generated by the activities and the materials

used. These example magnitudes have been combined with details of the period of construction activities to provide the ranking for the source magnitude that is set out in **Table 7.9**.

Table 7.9: Risk Allocation – Source (Dust Emission Magnitude)

Features of the Source of Dust Emissions	Dust Emission Magnitude
<p>Demolition - building over 75,000 m³, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities > 12 m above ground level.</p> <p>Earthworks – total site area over 110,000 m², potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds > 6 m in height.</p> <p>Construction - total building volume over 75,000 m³, activities include piling, on-site concrete batching, sand blasting.</p> <p>Trackout – over 50 HDV outwards movements in any one day, potentially dusty surface material (e.g. High clay content), unpaved road length > 100 m.</p>	Large
<p>Demolition - building between 12,000 to 75,000 m³, potentially dusty construction material and demolition activities 6 - 12 m above ground level.</p> <p>Earthworks – total site area between 18,000 to 110,000 m², moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 3 - 6 m in height.</p> <p>Construction - total building volume between 12,000 and 75,000 m³, use of construction materials with high potential for dust release (e.g. concrete), on-site concrete batching.</p> <p>Trackout – 20 - 50 HDV outwards movements in any one day, moderately dusty surface material (e.g. High clay content), unpaved road length 50 – 100 m.</p>	Medium
<p>Demolition - building less than 12,000 m³, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities < 6 m above ground, demolition during winter months.</p> <p>Earthworks – total site area less than 18,000 m². Soil type with large grain size (e.g. sand), < 5 heavy earth moving vehicles active at any one time, formation of bunds < 3 m in height.</p> <p>Construction - total building volume below 12,000 m³, use of construction materials with low potential for dust release (e.g. metal cladding or timber).</p> <p>Trackout – < 20 HDV outwards movements in any one day, surface material with low potential for dust release, unpaved road length < 50 m.</p>	Small

Pathway and Receptor - Sensitivity of the Area

- 7.4.22 Pathway means the route by which dust and particulate matter may be carried from the source to a receptor. The main factor affecting the pathway effectiveness is the distance from the receptor to the source. The orientation of the receptors to the source compared to the prevailing wind direction is a relevant risk factor for long-duration construction projects; however, short-term construction projects may be limited to a few months when the most frequent wind direction might be quite different, so adverse effects can potentially occur in any direction from the site.
- 7.4.23 As set out in the IAQM dust guidance, a number of attempts have been made to categorise receptors into high, medium and low sensitivity categories; however, there is no unified sensitivity classification scheme that covers the different potential effects on property and human health.
- 7.4.24 **Table 7.10** and **Table 7.11** set out the IAQM basis for categorising the sensitivity of people and property to dust and PM₁₀ respectively.

7.4.25 **Table 7.12** sets out the basis for determining the sensitivity of ecological receptors to dust.

Table 7.10: Sensitivities of People and Property Receptors to Dust

Receptor	Sensitivity
<p>Principles:</p> <ul style="list-style-type: none"> • users can reasonably expect enjoyment of a high level of amenity; or • the appearance, aesthetics or value of their property would be diminished by soiling; and 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>Indicative Examples:</p> <ul style="list-style-type: none"> • Dwellings. • Museums and other culturally important collections. • Medium and long-term car parks and car showrooms. 	High
<p>Principles:</p> <ul style="list-style-type: none"> • 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; or • the appearance, aesthetics or value of their property could be diminished by soiling; or • 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>Indicative Examples:</p> <ul style="list-style-type: none"> • Parks. • Places of work. 	Medium
<p>Principles:</p> <ul style="list-style-type: none"> • the enjoyment of amenity would not reasonably be expected; or • there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or • 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. <p>Indicative Examples:</p> <ul style="list-style-type: none"> • Playing fields, farmland (unless commercially-sensitive horticultural). • Footpaths and roads. • Short-term car parks. 	Low

Table 7.11: Sensitivities of People and Property Receptors to PM₁₀

Receptor	Sensitivity
<p>Principles:</p> <ul style="list-style-type: none"> Locations where members of the public are exposed over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM₁₀, a relevant location would be one where individuals may be exposed for eight hours or more in a day). <p>Indicative Examples:</p> <ul style="list-style-type: none"> Residential properties. Schools, hospitals and residential care homes. 	High
<p>Principles:</p> <ul style="list-style-type: none"> Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM₁₀, a relevant location would be one where individuals may be exposed for eight hours or more in a day). <p>Indicative Examples:</p> <ul style="list-style-type: none"> Office and shop workers (but generally excludes workers occupationally exposed to PM₁₀ as protection is covered by Health and Safety at Work legislation). 	Medium
<p>Principles:</p> <ul style="list-style-type: none"> Locations where human exposure is transient exposure. <p>Indicative Examples:</p> <ul style="list-style-type: none"> Public footpaths. Playing fields, parks. Shopping streets. 	Low

Table 7.12: Sensitivities of Ecological Receptors to Dust

Receptor	Sensitivity
<p>Principles:</p> <ul style="list-style-type: none"> Locations with an international or national designation and the designated features may be affected by dust soiling; or 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. <p>Indicative Examples:</p> <ul style="list-style-type: none"> Special Area of Conservation designated for acid heathlands adjacent to the demolition of a large site containing concrete (alkali) buildings or for the presence of lichen. 	High
<p>Principles:</p> <ul style="list-style-type: none"> Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or locations with a national designation where the features may be affected by dust deposition. <p>Indicative Examples:</p> <ul style="list-style-type: none"> SSSI with dust sensitive features. 	Medium

Receptor	Sensitivity
<p>Principles:</p> <ul style="list-style-type: none"> Locations with a local designation where the features may be affected by dust deposition. <p>Indicative Examples:</p> <ul style="list-style-type: none"> A Local Nature Reserve with dust sensitive features 	Low

7.4.26 Dust sensitive human health receptors located within 20 m, 50 m, 100 m and 250 m of the Onshore Infrastructure Area have been considered in the air quality assessment and are shown in Volume 2, Figure 7.2. The location of ecological receptors within the air quality study area are shown in Volume 2, Figure 7.3. These distances are based on the matrices in the IAQM guidance which are reproduced in **Table 7.13** to **Table 7.15**.

7.4.27 The IAQM methodology (IAQM, 2024) combines consideration of the pathway and receptor to derive the ‘*sensitivity of the area*’. **Table 7.13** and **Table 7.14** show how the sensitivity of the area has been derived for this assessment, in accordance with the IAQM approach. **Table 7.15** shows how the sensitivity of the area has been derived for this assessment.

Table 7.13: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors ^a	Distance from 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

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout.

- The total number of receptors within the stated distance has been estimated. Only the highest level of area sensitivity from the table has been recorded.
- For trackout, the distances have been measured from the side of the roads used by construction traffic. . The impact declines with distance from the site, and trackout impacts have only been considered up to 50 m from the edge of the road.

Table 7.14: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration ^a	Number of Receptors ^{b, c}	Distance from source (m)			
			<20	<50	<100	<250
High	> 18 µg.m ⁻³	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	16 - 18 µg.m ⁻³	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	14 - 16 µg.m ⁻³	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration ^a	Number of Receptors ^{b, c}	Distance from source (m)			
			<20	<50	<100	<250
	< 14 µg.m ⁻³	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	> 18 µg.m ⁻³	>10	High	Medium	Low	Low
		1 – 10	Medium	Low	Low	Low
	16 – 18 µg.m ⁻³	> 10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	< 16 µg.m ⁻³	>1	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout.

- a. This refers to the background concentration derived from the assessment of baseline conditions later in this report.
- b. The total number of receptors within the stated distance has been estimated. Only the highest level of area sensitivity from the table has been recorded.
- c. For high sensitivity receptors with high occupancy (such as schools or hospitals), the approximate number of occupants has been used to derive an equivalent number of receptors.
- d. For trackout, the distances have been measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and trackout impacts have only been considered up to 50 m from the edge of the road.

Table 7.15: Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from source (m) ^a	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout and for each designated site.

- a. Only the highest level of area sensitivity has been recorded.

7.4.28 The IAQM dust guidance lists the following additional factors that can potentially affect the sensitivity of the area and, where necessary, professional judgement has been used to adjust the sensitivity allocated to a particular area:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which the works will take place;
- any conclusions drawn from local topography;
- duration of the potential impact, as a receptor may become more sensitive over time; and
- any known specific receptor sensitivities which are considered to go beyond the classifications given in the table above.

7.4.29 The matrices in **Table 7.16** have been used to assign the risk for each activity to determine the level of mitigation that should be applied. For those cases where the risk category is “negligible”, no mitigation measures are required.

Table 7.16: Risk of Dust Impacts – Demolition

Receptor Sensitivity	Distance from source		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
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	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Assumptions and Limitations of the Assessment

7.4.30 The background PM₁₀ concentration has been drawn from the highest measured concentration at the nearest background monitoring location. Whilst this does not provide a site-specific concentration, it provides a sufficient level of detail to enable the assessment of the impact risk arising from dust generated during construction of the Proposed Development to be predicted robustly. This is because PM₁₀ concentrations are relatively evenly distributed across the UK due to the wide range of sources and the contribution of secondary particulate matter.

7.5 Baseline Environment

7.5.1 This section reviews the existing air quality conditions within the air quality study area.

7.5.2 For this air quality assessment, the background air quality has been characterised by drawing upon information provided in the Torridge District Council Annual Status Report 2020, data from Defra air quality monitoring networks and Defra projections of pollutant concentrations for years from 2018 to 2030 for each km grid square in the UK (Defra, 2018).

7.5.3 A detailed description of how the baseline air quality within the air quality study area has been derived for this air quality assessment is summarised in the following sections of this chapter.

Review and Assessment Process

7.5.4 There are no designated AQMAs by Torridge District Council within the district, indicating that air quality in the area is generally good. The nearest AQMA is North Devon AQMA No1, which is located approximately 7.1 km from the Proposed Development Draft Order Limits.

Local Urban Background Monitoring

7.5.5 Torridge District Council does not undertake any particulate matter monitoring. The Barnstaple automatic monitoring site is part of the UK Automatic Urban and Rural Network (AURN) that is run by the Environment Agency. The most recently measured annual-mean PM₁₀ concentrations are presented in **Table 7.17**. Concentrations in 2020 and 2021 have not been considered to avoid the temporary air quality effects associated with reduced traffic and activity during the COVID-19 pandemic.

Table 7.17: Automatically Monitored Annual-Mean PM₁₀ Concentrations

Monitor Code	Monitor Name	Concentration (µg.m ⁻³)			
		2016	2017	2018	2019
Barnstaple 1	AURN – Barnstaple A39	16.9	15.6	14.9	16.6

Defra Mapped Concentration Estimates

7.5.6 Defra’s total annual-mean PM₁₀ concentration estimates have been collected for the 1 km grid squares of the monitoring site and the Proposed Development site and are summarised in **Table 7.18**.

Table 7.18: Defra Mapped Annual-Mean Background PM₁₀ Concentration Estimates

Monitor Code	Monitor Name	Approximate distance from the Proposed Development Draft Order Limits	Concentration (µg.m ⁻³)	
			Range of Monitored	Estimated Defra Mapped
-	Proposed Development Site	-	-	11.8*
Barnstaple 1	AURN – Barnstaple A39	9.2	14.9-16.9	11.3

*11.8 µg.m⁻³ is the maximum Defra mapped concentration of all the 1 km grid squares the Proposed Development passes through.

7.5.7 For PM₁₀, the Defra mapped background concentration estimate is smaller than the range of the results from monitoring and the use of these data would not be conservative. Automatically monitored annual-mean PM₁₀ concentrations at the Barnstaple 1 monitor range from 14.9 to 16.9 µg.m⁻³. To ensure the assessment is

conservative, the background annual-mean PM₁₀ concentration has been derived from the highest concentration of 16.9 µg.m⁻³, monitored in 2016.

Future Baseline Conditions

- 7.5.8 Baseline pollutant concentrations are expected to reduce over time as cleaner, less polluting vehicle become a larger proportion of the fleet. For the purpose of this assessment and to remain conservative, no reduction in baseline concentrations have been applied.
- 7.5.9 With UK-wide initiatives such as those set out in the Clean Air Strategy, air quality is likely to improve over time. As such, to ensure that the assessment presents conservative results, no reduction in the background concentration has been assumed in future years.

Key Receptors

- 7.5.10 **Table 7.19** identifies the receptors taken forward into the assessment. Furthermore, Figure 7.2 (see Volume 2, Figures) and Figure 7.3 (see Volume 2, Figures) present the location of ecological and human health receptors within the air quality study area.

Table 7.19: Key receptors taken forward to assessment

Receptor	Description	Sensitivity/Value
Human health receptors	All human health receptors within 350 m of the Onshore Infrastructure Area.	Outlined in Table 7.10 and Table 7.11 .
Designated ecological receptors	All designated ecological receptors within 50 m of the Onshore Infrastructure Area.	Outlined in Table 7.12 .

7.6 Key Parameters for Assessment

Maximum Design Scenario

- 7.6.1 The maximum design scenarios identified in **Table 7.20** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project Description of the PEIR. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g., different infrastructure layout), to that assessed here be taken forward in the final design scheme. Therefore, this comprises a conservative assessment of a worst case scenario.

Table 7.20: Maximum design scenario considered for the assessment of potential impacts

Potential Impact	Phase ¹			Maximum Design Scenario	Justification
	C	O	D		
The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction and decommissioning activities.	✓	×	✓	Construction Phase Converter Site <ul style="list-style-type: none"> • Earthworks to establish development platforms, screening bunds and export of surplus material. • Combined footprint of the two converter stations is 130,000 m², including two converter hall buildings. • Temporary converter site construction compound is 20,000 m² (additional to permanent footprint of buildings). • Duration of construction would be 72 months. 	The maximum design scenario presents the greatest area required for the construction of the proposed development; the greatest size of the temporary working areas; the movement of construction vehicles; and the longest duration of construction which represents the greatest potential for dust soiling generated by construction and decommissioning activities.
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite construction and decommissioning activities.	✓	×	✓	AC Cables Connection <ul style="list-style-type: none"> • Open cut trenching: The maximum number of trenches would be four, with an approximate depth of 1.4 m. There would be two trenches per bipole, which would form separate corridors prior to convergence at the Alverdiscott Substation site. • The working area will include a construction corridor width of 65 m (32.5 m for each bipole), with a length of up to 1.2 km. Duration of 12 months for each bipole (total of 24 months). Alverdiscott Substation Connection Development <ul style="list-style-type: none"> • Footprint of the substation would be 28,000 m². • There would be potential diversions of existing 132 kV and 11 kV overhead lines. • Duration of works would be 24 months. Onshore HVDC Cables <ul style="list-style-type: none"> • Open cut trenching: The maximum number of trenches would be two, with an approximate depth of 1.4 m. Width includes a haul road. There would be a total of 34 joint bays and 34 link 	

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Potential Impact	Phase ¹			Maximum Design Scenario	Justification
	C	O	D		
				<p>boxes, with 140 m³ and 3.15 m³ of material excavated- for each joint bay and link box, respectively.</p> <ul style="list-style-type: none"> • The working area will include a construction corridor width of 65 m, with a length of up to 14.5 km. Duration of up to 36 months. • The maximum number of Horizontal Directional Drilling (HDD) locations is eight. Each major HDD location will have two compounds, measuring up to 10,000 m². • The main construction compound at Gammaton Moor would measure up to 63,000 m². The duration of this compound would be 72 months, as it would also support the construction of the Converter Site. • The secondary construction compound (A39 compound) would measure up to 48,000 m², and have a duration of 36 months. <p>Landfall</p> <ul style="list-style-type: none"> • The maximum number of transition joint bays would be two. The volume of excavated material per transition joint bay would be 1,875 m³. • HDD: The maximum number of cables will be four HVDC cables, with an indicative HDD length of 2,110 m from the offshore cable corridor to the transition joint bays. • Landfall would include a compound of 10,000 m². • Duration of landfall installation would be 18 months initially, with a further six months following a break in works (24 months, split across two separate phases). • HDD will pass beneath the designated site, Mermaid's Pool to Rowden Gut SSSI. <p>Highway Improvements</p> <ul style="list-style-type: none"> • Selective widening of Gammaton Road 	

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Potential Impact	Phase ¹			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> Widening of unnamed road between Gammaton Cross and Converter Site including a short section of new road to connect Gammaton Road and the unnamed road. Creation of accesses to onshore HVDC cable route construction sites including: <ul style="list-style-type: none"> Creation of remodelled junction at A386 and unnamed road to Littleham. Widening of junction at the Cornborough sewage treatment works access. Access to other major compounds at A39 (north and south) and Gammaton Road. <p>Decommissioning</p> <ul style="list-style-type: none"> Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are likely to occur within the construction working areas and to requires no greater amount or duration of activity than assessed for construction). 	

¹ C=construction, O=operational and maintenance, D=decommissioning

7.7 Mitigation Measures Adopted as Part of the Proposed Development

- 7.7.1 For the purposes of the EIA process, the term ‘Measures adopted as part of the Proposed Development’ is used to include the following types of mitigation measures (adapted from IEMA, 2016). These measures are set out within Volume 1, Appendix 3.1: Draft Mitigation Schedule, of the PEIR.
- Primary (inherent) mitigation – measures included as part of the project design. IEMA describes these as ‘modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken’. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the Development Consent Order (DCO). For example, a reduction in footprint or height.
 - Secondary (foreseeable) mitigation. IEMA describes these as ‘actions that will require further activity in order to achieve the anticipated outcome’. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through an environmental management plan.
 - Tertiary (inexorable) mitigation. IEMA describes these as ‘actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects’. It may be helpful to secure such measures through a Construction Environmental Management Plan (CEMP) or similar.
- 7.7.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within the draft mitigation schedule (see Volume 1, Appendix 3.1: Draft Mitigation Schedule, of the PEIR). The measures relevant to this chapter are summarised in **Table 7.21**.
- 7.7.3 A number of measures (primary and secondary) have been adopted as part of the Proposed Development to reduce the potential for impacts on air quality, which are outlined within **Table 7.22** and included within the Outline Onshore CEMP (On-CEMP) (see Volume 1, Appendix 3.2: Outline On-CEMP, of the PEIR). These measures are based on the measures that are highly recommended by the IAQM for sites with high dust risk. These will be implemented for construction activities on site.

Table 7.21: Mitigation measures adopted as part of the Proposed Development

Measure Adopted	How the Measure Will be Secured
Tertiary Measures	
An Outline Dust Management Plan (DMP) will be submitted with the application sitting within the Outline On-CEMP. Best practice measures, as outlined in IAQM guidance (IAQM, 2024) will be included.	Dust control measures to be secured through Dust Management Plan (DMP), as an appendix to the final

Measure Adopted	How the Measure Will be Secured
	CEMP(s) which will be secured via a DCO requirement.
An Outline Construction Traffic Management Plan (CTMP) will be prepared and submitted with the DCO application. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.	Outline CTMP to be provided as part of application for development consent. CTMP(s) to be developed in line with Outline CTMP and agreed with relevant stakeholders and will be secured as a DCO requirement.
An Outline Onshore Decommissioning Strategy would be developed in a timely manner in consultation with the relevant stakeholders and prior to commencement of construction. The Onshore Decommissioning Plan(s) would be developed in accordance with the Outline Onshore Decommissioning Strategy prior to decommissioning.	To be a requirement of the DCO.

Table 7.22: Details of IAQM dust control measures

Measure Adopted	How the Measure Will be Secured
<p>Communications</p> <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 person(s) accountable for air quality and dust issues on the Proposed Development Draft Order Limits. This may be the environment manager/engineer or the site manager. Display the head or regional office contact information 	Dust control measures to be secured through DMP, as an appendix to the final CEMP(s) which will be secured via a DCO requirement.
<p>Dust Management Plan</p> <ul style="list-style-type: none"> Develop and implement a DMP (which may include measures to control other emissions). The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust. 	
<p>Site Management</p> <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 the local authority 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 log book. Hold regular liaison meetings with other high risk construction sites within 500 m of the Proposed Development Draft Order Limits, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes. 	
<p>Monitoring</p> <ul style="list-style-type: none"> Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street 	

Measure Adopted	How the Measure Will be Secured
<p>furniture, cars and window sills within 100 m of the Proposed Development Draft Order Limits. Cleaning requirements will be discussed and agreed with relevant stakeholders where deemed appropriate.</p> <ul style="list-style-type: none"> • Carry out regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of Proposed Development Draft Order Limits. • 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. • Where deemed reasonably necessary in consultation with the relevant local planning authority, dust deposition, dust flux or real-time PM10 continuous monitoring locations will be agreed. Commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. A shorter monitoring period or concurrent upwind and downwind monitoring may be agreed by the relevant local planning authority. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction (IAQM, 2012). 	
<p>Preparing and Maintaining the Site</p> <ul style="list-style-type: none"> • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Use screening intelligently where possible – e.g., locating site offices between potentially dusty activities and the receptors. • Where deemed reasonably required, erect solid screens or barriers around the work site. • Where reasonably practicable, fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period. • Avoid site runoff of water or mud. • 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, ensure they are appropriately covered. • Depending on the duration that stockpiles will be present and their size - cover, seed, fence or water to prevent wind whipping. 	
<p>Operating Vehicle/machinery and Sustainable Travel</p> <ul style="list-style-type: none"> • Ensure all vehicles switch off engines when stationary – no idling vehicles. • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. • Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate) • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. • Implement a Construction Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). 	

Measure Adopted	How the Measure Will be Secured
<p>Operations</p> <ul style="list-style-type: none"> • 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. • Use enclosed chutes, conveyors and covered skips, where practicable. • 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. 	
<p>Waste Management</p> <ul style="list-style-type: none"> • Avoid bonfires and burning of waste materials. 	
<p>Medium Risk Measures Specific to Construction</p> <ul style="list-style-type: none"> • 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. 	
<p>High Risk Measures Specific to Trackout</p> <ul style="list-style-type: none"> • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. • Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as practicable. • Record all inspections of haul routes and any subsequent action in a site log book. • 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 (with rumble grids to dislodge accumulated dust and mud prior to leaving the site). • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. • Access gates to be located at least 10 m from receptors where possible 	

7.7.4 The IAQM dust guidance states that with the recommended dust mitigation measures in place the residual effect will normally be “not significant”, and recommends the mitigation is secured by for example planning conditions, a legal obligation, or by legislation.

7.8 Assessment of Construction Effects

Overview

7.8.1 The impacts of the construction of the Proposed Development have been assessed. The potential impacts arising from the construction phase of the

Proposed Development are listed in **Table 7.28**, along with the maximum design scenario against which each impact has been assessed.

- 7.8.2 The type of activities that could cause fugitive dust emissions are: demolition, earthworks; handling and disposal of spoil; wind-blown particulate material from stockpiles; handling of loose construction materials; and movement of vehicles, both on and off site.
- 7.8.3 The level and distribution of construction dust emissions will vary according to factors such as the type of dust, duration and location of dust-generating activity, weather conditions and the effectiveness of suppression methods.
- 7.8.4 The main effect of any dust emissions, if not mitigated, could be annoyance due to soiling of surfaces, particularly windows, cars and laundry. However, it is normally possible, by implementation of proper control, to ensure that dust deposition does not give rise to significant adverse effects, although short-term events may occur (for example, due to technical failure or exceptional weather conditions). The following assessment, using the IAQM methodology, predicts the risk of dust impacts and the level of mitigation that is required to control the residual effects to a level that is “not significant”.

Risk of Dust Impacts

Source

- 7.8.5 The total volume of structures to be demolished is less than 12,000 m³. Therefore, the dust emission magnitude for demolition is classified as **small**.
- 7.8.6 The area of the Proposed Development is greater than 110,000 m². Therefore, the dust emission magnitude for the earthworks phase is classified as **large**.
- 7.8.7 The total volume of the structures to be constructed would be greater than 75,000 m³ and the dust emission magnitude for the construction phase is classified as **large**.
- 7.8.8 At the peak of activity, the maximum number of daily outward HGV movements generated by the construction activity will be between greater than 50 and the dust emission magnitude for trackout would be classified as **large**.

Table 7.23: Dust Emission Magnitude for Demolition, Earthworks, Construction and Trackout

Demolition	Earthworks	Construction	Trackout
Small	Large	Large	Large

Pathway and Receptor – Sensitivity of the Area

- 7.8.9 All demolition, earthworks and construction activities are assumed to occur within the Onshore Infrastructure Area. As such, receptors at distances within 20 m, 50 m, 100 m and 250 m of the Onshore Infrastructure Area and along AIL routes up to 250 m from site accesses have been identified and are illustrated in Figure 7.1 (See Volume 2, Figures). The sensitivity of the area has been classified and the results are provided in **Table 7.24** below.

Table 7.24: Sensitivity of the Surrounding Area for Demolition, Earthworks and Construction

Potential Impact	Sensitivity of the Surrounding Area	Reason for Sensitivity Classification
Dust Soiling	Medium	Residential receptors within 20 m of the Proposed Development Draft Order Limits. 1 – 10 high sensitivity receptors located within 20 m of the Onshore Infrastructure Area (Table 7.13)
Human Health	Low	Approx. 1 - 10 residential properties within 20 m of Proposed Development Draft Order Limits. Background PM ₁₀ concentrations for the assessment = 16.9 µg.m ⁻³ . 1 – 10 high sensitivity receptors located within 20 m of the Onshore Infrastructure Area and PM ₁₀ concentrations <24 µg.m ⁻³ (Table 7.14).
Ecology	Low	One local wildlife nature reserve within 50 m of Proposed Development Draft Order Limits.

7.8.10 The Dust Emission Magnitude for trackout is classified as **large** and trackout may occur on roads up to 250 m from the Onshore Infrastructure Area. The sensitivity of the area has been classified and the results are provided in **Table 7.25**.

Table 7.25: Sensitivity of the Surrounding Area for Trackout

Potential Impact	Sensitivity of the Surrounding Area	Reason for Sensitivity Classification
Dust Soiling	High	>10 residential properties aligning roads up to 250 m from the Onshore Infrastructure Area and site accesses. >10 high sensitivity receptors located within 20 m of the roads (Table 7.13)
Human Health	Low	Between 10 – 100 residential properties aligning roads up to 250 m from the Onshore Infrastructure Area and site accesses. Background PM ₁₀ concentrations for the assessment = 16.9 µg.m ⁻³ . 10 – 100 high sensitivity receptors located within 20 m of the roads and PM ₁₀ concentrations <24 µg.m ⁻³ (Table 7.14).
Ecology	Low	One local nature reserve within 50 m of Onshore Infrastructure Area.

Overall Dust Risk

7.8.11 The Dust Emission Magnitude has been considered in the context of the Sensitivity of the Area to give the Dust Impact Risk. **Table 7.26** summarises the Dust Impact Risk for the four activities.

Table 7.26: Dust Impact Risk for Earthworks, Construction and Trackout

Source	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Medium	Medium	High
Human Health	Negligible	Low	Low	Low
Ecology	Negligible	Low	Low	Low
Risk	Low	Medium	Medium	High

7.8.12 Taking the Onshore Infrastructure Area and the ALL routes (up to 250 m from site accesses) as a whole, the overall risk is deemed to be high. The mitigation measures appropriate to a level of risk for the site as a whole and for each of the phases are set out in **Table 7.22**.

7.8.13 Provided this package of mitigation measures is implemented, the residual construction dust effects will not be significant. The IAQM dust guidance states that *‘For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be “not significant”.*’ The IAQM dust guidance recommends that significance is only assigned to the effect after the activities are considered with mitigation in place.

7.8.14 Therefore, following the implementation of dust control measures recommended for medium risk sites (see **Table 7.22**), the dust impact risk for demolition, construction, earthworks and trackout associated with construction of the proposed development is categorised as **negligible**, which is not significant in EIA terms. In addition, the potential effects of construction dust are predicted to be of local spatial extent, intermittent in frequency and mostly reversible.

Further Mitigation

7.8.15 Impacts during construction, such as dust generation and plant vehicle emissions, are predicted to be of short duration and only relevant during the construction phase. The results of the risk assessment of construction dust impacts undertaken using the IAQM dust guidance, indicates that before the implementation of mitigation and controls, the risk of dust impacts will be high. Implementation of the “highly recommended” mitigation measures described in the IAQM construction dust guidance should reduce the residual dust effects to a level categorised as “not significant” and therefore, no further mitigation will be required.

Future Monitoring

7.8.16 Following the implementation of appropriate recommended mitigation measures (IAQM, 2024) set out in **Table 7.22**, the air quality effects are not expected to be significant, and no future monitoring is proposed.

7.9 Assessment of Operational Effects

- 7.9.1 Once operational, the converter stations would provide jobs for 30 full time equivalent employees. Furthermore, access would be required for staff to undertake inspection, maintenance, repairs and make adjustments.
- 7.9.2 Vehicle trips once the development is operational could potentially impact local air quality. The EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document (EPUK & IAQM, 2017) indicates that air quality assessments should include developments that increase annual average daily LDV traffic flows by more than 100 within or adjacent to an AQMA and more than 500 elsewhere. These criteria are highly unlikely to be exceeded. The EPUK & IAQM states that:
- “If none of the criteria are met then there should be no requirement to carry out an air quality assessment for the impact of the proposed development on the local area, and the impacts can be considered to have insignificant effects.”*
- 7.9.3 No other sources of air pollution during the operational phase have been identified. On that basis, the air quality effects are considered to be not significant.

Further Mitigation

- 7.9.4 No further mitigation will be required once the Proposed Development is operational.

Future Monitoring

- 7.9.5 No future monitoring will be required once the Proposed Development is operational.

7.10 Assessment of Decommissioning Effects

- 7.10.1 The application is seeking consent for the installation, operation and maintenance of two converter stations and associated development including transmission infrastructure and highways improvements.
- 7.10.2 The converter stations would be designed, manufactured and installed for a minimum operational lifetime, which is currently assumed to be 50 years. The operational lifetime of the onshore and offshore electricity cables (including both HVDC and HVAC) would exceed that of the converter stations. The highways improvements will not have a forecast end of life and will not be decommissioned.
- 7.10.3 For the electricity infrastructure only, the end of the operational lifetime is estimated at 50 years from date of full commissioning. Subject to relevant additional consents and legislative requirements, it is anticipated that potential refurbishment and operational life extension of the Proposed Development may occur. This potential refurbishment and extension of operational life would be considered closer to the end of the initial operational lifetime.
- 7.10.4 In the event that the operational lifetime of the Proposed Development is not extended, decommissioning would take place. The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vehicles, vessels and equipment. Therefore, it is likely that

the effects of decommissioning on the environment would be no worse than those effects identified during the construction phase.

- 7.10.5 Therefore, if the same mitigation measures are implemented as listed in **Table 7.22**, the residual construction dust effects will not be significant. The IAQM dust guidance states that *'For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.* The IAQM dust guidance recommends that significance is only assigned to the effect after the activities are considered with mitigation in place. These mitigation measures will be included in the Onshore Decommissioning Plan where relevant.

7.11 Cumulative Environmental Assessment

- 7.11.1 Cumulative dust effects are only likely to be significant for any sensitive receptors that are located within 250 m of both this construction activity and another dust-emitting activity being carried out at the same time.
- 7.11.2 The risk of dust impacts is best mitigated at source. Under the assumption that all developments implement dust mitigation and controls proportionate to the level of risk, there should be no residual cumulative air quality effect.
- 7.11.3 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Proposed Development together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 1, Appendix 5.3: CEA screening matrix). Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.
- 7.11.4 The Air Quality CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA Methodology of the PEIR. As part of the assessment, all projects and plans considered alongside the Proposed Development have been allocated into 'tiers' reflecting their current stage within the planning and development process.
- Tier 1
 - under construction;
 - permitted application;
 - submitted application; and
 - those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact.
 - Tier 2
 - Scoping Report has been submitted.
 - Tier 3
 - Scoping Report has not been submitted;
 - identified in the relevant Development Plan; and
 - identified in other plans and programmes.

- 7.11.5 This tiered approach is adopted to provide a clear assessment of the Proposed Development alongside other projects, plans and activities.
- 7.11.6 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 7.27**.

Table 7.27: List of cumulative developments considered within the CEA

Project	Status	Distance from Onshore Infrastructure Area (nearest point, km)	Description	Overlap with the Proposed Development?
Construction of photovoltaic (PV) solar array and associated works (Variation of condition 3 of planning permission 1/0997/2012/FULM) (Variation of conditions 1 & 2 of Planning Application 1/1130/2020/FULM)	Operational	Adjacent to the Onshore Infrastructure Area	Extension to operational life. Construction of photovoltaic (PV) solar array and associated works (Variation of condition 3 of planning permission 1/0997/2012/FULM) -	Yes
Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)	Permitted	Adjacent to the Onshore Infrastructure Area	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)	Yes
Installation and operation of a solar farm together with all associated works, equipment and infrastructure (Further Information)	Permitted	Partially within the Onshore Infrastructure Area	Installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure	Yes
Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)	Permitted	0.2	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission	Yes

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Project	Status	Distance from Onshore Infrastructure Area (nearest point, km)	Description	Overlap with the Proposed Development?
Reserved matters application for details of appearance, landscaping, layout and scale for 61 no. dwellings and associated works pursuant to application 1/1086/2017/OUTM	Pending	0.2	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 61 no. dwellings and associated works pursuant to Outline Planning Permission LPA Ref; 1/1086/2017/OUTM.	Yes
Outline application for the erection of up to 400 dwellings, amenity open space, footpath links, associated landscaping and infrastructure works with all matters reserved except access (Affecting a Public Right of Way)	Permitted	0.25	Outline application for the erection of up to 400 dwellings, amenity open space, footpath links, associated landscaping and infrastructure works with all matters reserved except access (Affecting a Public Right of Way)	Yes
Reserved matters application for access, appearance, landscaping, layout and scale pursuant to planning approval 1/0521/2021/FULM	Permitted	0.3	300 dwellings with associated infrastructure and public open space (Variation of conditions 1 (the reserved matters), 11 (highways) and 18 (contamination))	Yes
Reserved matters application for appearance, landscaping, layout and scale for a proposal of 200 dwellings pursuant to outline planning permission 1/0947/2020/OUTM and associated infrastructure (Amended Plans)	Pending	0.35	Application for approval of Reserved Matters pursuant to 1/0947/2020/OUTM (layout, scale, appearance, and landscaping) for 200 dwellings and associated infrastructure.	Yes
Outline application for up to 211 dwellings, up to 4.27 hectares of commercial land (Use Classes B2, B8 and E(g)), public open space, and other associated infrastructure with all matters reserved except access.	Permitted	0.5	Outline application for up to 211 dwellings - use classes B2, B8 and E(g), public open space and other associated infrastructure with all matters reserved except access	Yes

Cumulative Effects Assessment

Construction Phase

- 7.11.7 There is potential for cumulative effects to occur with other proposed developments within 500 m of the Onshore Infrastructure Area during construction of the Proposed Development. This distance is two times the relevant study area of the Proposed Development (250 m) and allows for any overlap between the Proposed Development and another cumulative scheme.
- 7.11.8 However, on the basis that other proposed developments implement suitable *primary and tertiary mitigation*, as recommended in the Guidance on the assessment of dust from demolition and construction (IAQM, 2024), it is considered that cumulative effects arising during construction are **not significant**.

Operations and Maintenance Phase

- 7.11.9 The potential impacts with respect to air quality arising from operations and maintenance of the Proposed Development have been scoped out of the assessment.

Decommissioning Phase

- 7.11.10 The potential impacts during decommissioning of the Proposed Development are expected to be similar to the impacts during demolition, earthworks, construction and trackout. Therefore, it is considered that cumulative effects arising during decommissioning of the Proposed Development are **not significant**.

7.12 Transboundary Effects

- 7.12.1 A screening of transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to air quality from the Proposed Development upon the interests of other states (See Volume 1, Appendix 5.2: Transboundary Screening, of the PEIR)

7.13 Inter-related Effects

- 7.13.1 Inter-relationships are the impacts and associated effects of different aspects of the Proposed Development on the same receptor. These are as follows.
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Proposed Development (construction, operation and maintenance), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., construction noise effects from piling and operational substation noise).
 - Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on air quality may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led

effects may be short term, temporary or transient effects, or incorporate longer term effects.

- 7.13.2 The potential impacts associated with construction and decommissioning of the Proposed Development include an increase in suspended particulate matter and deposited dust that has fallen out of the air onto surfaces, which do not interact.
- 7.13.3 This chapter has scoped out the impact of air emissions generated by vehicles, based upon traffic flows that do not exceed EPUK & IAQM air quality thresholds, provided by the client, and which are assessed in Volume 2, Chapter 5: Traffic and Transport, of the PEIR. The air quality assessment has taken into account effects in relation to human and ecological receptors. Effects on human health are further considered in Volume 4, Chapter 4: Human Health.
- 7.13.4 Further details of inter-related effects are provided in Volume 4, Chapter 5: Inter-related effects.

7.14 Summary of Impacts, Mitigation Measures and Monitoring

- 7.14.1 Information on air quality within the study area was collected through desktop review and consultation.
- 7.14.2 **Table 7.28** presents a summary of the impacts, measures adopted as part of the Proposed Development and residual effects in respect to air quality. The impacts assessed include:
- The potential impact of dust soiling on dust sensitive receptors arising from demolition, earthworks, construction and trackout;
 - The impact of an increase in suspended particulate matter on people arising from dust emissions generated by onsite construction and decommissioning activities
 - The impact on ecological receptors arising from dust emissions generated by onsite construction activities.
- 7.14.3 Overall, it is concluded that there will be no significant effects arising from the Proposed Development during the construction, operation and maintenance or decommissioning phases.
- 7.14.4 Overall, it is concluded that there will be no significant cumulative effects from the Proposed Development alongside other projects/plans.
- 7.14.5 No potential transboundary impacts have been identified in regard to effects of the Proposed Development.

Table 7.28: Summary of likely environmental effects on Air Quality

Impact	Receptor	Sensitivity of receptor	Short/medium /long term	Magnitude of impact	Significance of effect	Significant /Not significant	Notes
Construction and Decommissioning phase							
The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction and decommissioning activities.	Property	High	Short term	Large	Negligible	Not significant	When the mitigation measures described in Table 7.22 are implemented, the risk is mitigated to a level that is not significant.
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by onsite construction and decommissioning activities.	People	Low	Short term	Large	Negligible	Not significant	When the mitigation measures described in Table 7.22 are implemented, the risk is mitigated to a level that is not significant.
The impact on ecological receptors arising from dust emissions generated by onsite construction and decommissioning activities.	Ecology (Kynoch's Foreshore LNR)	Low	Short term	Large	Negligible	Not significant	When the mitigation measures described in Table 7.22 are implemented, the risk is mitigated to a level that is not significant.

7.15 Next Steps

- 7.15.1 This air quality assessment will be made available for the environmental protection officer and other stakeholders to provide comments on the scope and methodology.

7.16 References

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