



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 3, Chapter 7: Onshore Air Quality

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Annexes

Annex number	Annex title
Volume 3, Annex 7.1	Dust Risk Assessment Methodology

Glossary

Term	Meaning
Alternating current (AC) connection cables	The corridor within which the AC connection cables will be located, from the onshore land substation to the National Grid Hawthorn Pit Substation.
Annual Average Daily Traffic (AADT)	The AADT is the average number of vehicles that travel on a specific road each day, calculated over the course of 24 hours, in a full year.
Affected road network	Roads within the construction route where predicted construction traffic exceeds the screening thresholds set out in relevant guidance, including Environmental Protection UK and Institute of Air Quality Management (IAQM) (2017) for human health and National Highways (2024) for ecological receptors.
Blue Onshore Land Substation (LSS) Option Area	Proposed location option for the onshore land substation, located west of the A19 and south of the access road to the Jade Business Park.
Commitments	Measures (embedded mitigation and secondary) to be adopted during the construction, operation and maintenance, and decommissioning phases of the MHPGC Project.
Cumulative effect	For each environmental topic, the baseline environment will be characterised, and the likely significant effect will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent.
Cumulative effects assessment	Assessment of the likely effects arising from the MHPFC Project alongside the likely effects arising from other proposed developments on the same receptor or resource.
Dust	Solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. The terms dust and particulate matter are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance, the term 'dust' has been used to include the particles that give rise to soiling, and to human health and ecological effects (IAQM, 2024).
Earthworks	Includes the processes of soil-stripping, ground-levelling, excavation, and landscaping.
Embedded mitigation	Measures included as part of the project design. Includes both primary and tertiary mitigation.
Environmental Impact Assessment (EIA)	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.
Green Onshore Land Substation (LSS) Option Area	Proposed location option for the onshore land substation, located between Jade Business Park (Spring Rd, Murton, Seaham SR7 9DR) and the National Grid Hawthorn Pit Substation.
Inter-related effects	Effects that may arise from the interactions between different EIA topic effects considered within the project-alone assessment, potentially leading to more significant effects than if they were to be considered in isolation.

Term	Meaning
Landfall	The area in which the offshore export cables make landfall (come onshore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area between the trenchless technique exit pits and the transition joint bay inclusive of all construction works.
Magnitude	A combination of the spatial extent, duration, frequency and reversibility of an impact.
Maximum design scenario (MDS)	The realistic worst case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the MHPGC Project.
MHPGC Project Scoping Report	A Scoping Report for the MHPGC Project, scoping the likely significant effects of the project on the environment, was submitted and accepted by Planning Inspectorate (PINS) and submitted to the Scottish Ministers, via the Marine Directorate – Licencing Operations Team (MD-LOT) in February 2025.
MHPGC Project Scoping Opinions	Separate scoping opinions received from PINS (on behalf of the Secretary of State) and MD-LOT (on behalf of the Scottish Ministers) in response to the MHPGC Project Scoping Report. The MHPGC Project Scoping Opinions contain the range of issues that PINS, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the EIA process.
Morven Hawthorn Pit Grid Connection Project	The MHPGC Project is comprised of the offshore export cables in Scottish and English waters from the Morven North or the Morven South offshore substation platform(s) (OSP), landfall, onshore export cables, the onshore land substation (LSS) and AC connection cables. Also referred to in this report as the MHPGC Project, for ease of reading.
MHPGC PEIR Red Line Boundary: Onshore	Spatial extent used to define the environmental assessment within the PEIR. The area within which all onshore components of the MHPGC Project will be located landward of MHWS, including areas required on a temporary basis during construction and/or decommissioning (e.g. construction compounds).
Morven North Offshore Wind Array Project (hereafter 'Morven North')	The Morven North Offshore Wind Array Project which includes the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven North Boundary.
Morven South Offshore Wind Array Project	The Morven South Offshore Wind Array Project, which includes the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven South Boundary.
National Grid Hawthorn Pit Substation	The National Grid substation at Hawthorn Pit, County Durham, which the AC connection cables will connect into from the onshore land substation.
Onshore components	Infrastructure landward of the transition joint bay at landfall, comprising onshore export cables, onshore export cables corridor, onshore land substation (LSS) AC connection cables and AC connection cables corridor and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses.

Term	Meaning
Onshore export cables	HVDC cables which bring electricity from the TJB to the onshore land substation.
Onshore land substation (LSS)	A purpose-built site comprising a compound containing the electrical components for converting the HVDC to HVAC power. The LSS site associated with the MHPGC Project adjusts the power quality and power factor to meet the requirements of power supply being fed to the National Grid Hawthorn Pit Substation.
Operations and maintenance phase (O&M)	The operational and maintenance phase of the MHPGC Project.
Planning Inspectorate (PINS)	The PINS is an executive agency of the UK Government responsible for administering and examining DCO applications for NSIPs in England. PINS manages the application process, oversees consultation and examination, and makes a recommendation to the relevant Secretary of State on whether consent should be granted.
Particulate matter (PM)	Abbreviation for particulate matter suspended in the air. PM ₁₀ is airborne particulate matter with an aerodynamic diameter less than 10 microns (µm); PM _{2.5} is less than 2.5µm (IAQM, 2024).
MHPGC Project Preliminary Environmental Information Report (PEIR)	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.
Primary mitigation	Measures included as part of the location or design of the MHPGC Project made during the pre-application phase that are an inherent part of the MHPGC 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 MHPGC Project, the parameters and associated commitments secured by the DCO and marine licence, or both.
Residual effects	Effects that continue to exist after mitigation has been applied.
Secondary mitigation	Actions that will require further activity to achieve the anticipated outcome” and may be imposed as part of the planning consent, or through inclusion in the ES. These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures both pre-mitigation and residual effects are presented.
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Tertiary mitigation	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.
The Study Area	For each environmental topic, the baseline environment will be characterised, and the potential environmental impacts will be

Term	Meaning
	described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent across which potential impacts of MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence).
Trackout	Dust, mud and debris that are carried off a construction site by vehicles and deposited onto the adjoining public highway or access roads.
Transboundary impact	Potential impacts resulting from MHPGC Project and affecting another European Economic Area (EEA) state.
Transboundary effects	Assessment of potential significant effects resulting from MHPGC Project on the interests of another EEA state(s).

Acronyms

Acronym	Meaning
AADT	Annual Average Daily Traffic
AC	Alternating Current
AIL	Abnormal Indivisible Load
AIR	Air Information Resource
APIS	Air Pollution Information System
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQOs	Air Quality Objectives
AQA	Air Quality Assessment
AQAL	Air Quality Assessment Level
AQS	Air Quality Standards
AQG	Air Quality Guidelines
ASR	Annual Status Report
CAFE	Cleaner Air for Europe
CDP	County Durham Plan
CEA	Cumulative Effect Assessment
CL	Critical Load
CLe	Critical Level
CO	Carbon Monoxide
CoCP	Code of Construction Practice
CSDP	Core Strategy and Development Plan
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs

Acronym	Meaning
DESNZ	Department for Energy Security and Net Zero
DCC	Durham County Council
DMRB	Design Manual for Roads and Bridges
DMP	Dust Management Plan
EEA	European Economic Area
EIA	Environmental Impact Assessment
EIP	Environmental Improvement Plan
EPUK	Environmental Protection UK
ES	Environmental Statement
EU	European Union
HDD	Horizontal Directional Drilling
HDV	Heavy Duty Vehicle
HRA	Habitats Regulations Assessment
HVDC	High Voltage Direct Current
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management and Assessment
ISEP	Institute of Sustainability and Environmental Professionals
LAQM	Local Air Quality Management
LAQM.TG22	Local Air Quality Management Technical Guidance 2022
LDV	Light Duty Vehicle
LNR	Local Nature Reserve
LSS	Onshore land substation
LWS	Local Wildlife Site
MD-LOT	Marine Directorate – Licensing Operations Team
MDS	Maximum Design Scenario
MHPGC	Morven Hawthorn Pit Grid Connection
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MLWS	Mean Low Water Springs
NAQO	National Air Quality Objective
NH ₃	Ammonia
NNR	National Nature Reserve
NMVOC	Non-methane volatile organic compounds
NPS	National Policy Statements
NPPF	National Planning Policy Framework
NRMM	Non Road Mobile Machinery

Acronym	Meaning
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
O&M	Operations and Maintenance
OSP	Offshore Substation Platform
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PM	Particulate Matter
PM ₁₀	Particulate Matter 10 micrometers or less in diameter
PM _{2.5}	Particulate Matter smaller than 2.5 micrometers
PPG	Planning Practice Guidance
SAC	Special Area of Conservation
SCC	Sunderland City Council
SNAPs	Shared Nitrogen Action Plans
SO ₂	Sulphur Dioxide
SoS	Secretary of State
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TJB	Transition Joint Bay
UK	United Kingdom
WHO	World Health Organisation

Units

Unit	Meaning
bgl	Below ground level
ha	Hectare
km	Kilometres
km ²	Square kilometres
m	Metres
m ²	Square metres
m ³	Cubic metres
mph	Miles per hour
t	Tonnes
µg/m ³ or µg.m ⁻³	Micrograms per cubic metre
%	Percent

7 Air quality

7.1 Introduction

- 7.1.1.1 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 Morven Hawthorn Pit Grid Connection Project (hereafter 'MHPGC Project'), as described in **Volume 1, Chapter 2: Project Description, of the PEIR**.
- 7.1.1.2 The chapter considers the potential impacts and effects on air quality that could result from the construction, operation and maintenance (O&M) and decommissioning phases of the MHPGC Project. Specifically, it relates to the onshore elements of the MHPGC Project that extend landward of Mean High Water Springs (MHWS) to the National Grid Hawthorn Pit Substation in England.
- 7.1.1.3 This chapter describes the methodology, datasets that have informed the preliminary assessment, baseline conditions, including future baseline, mitigation measures and the preliminary residual significant effects on air quality that could result from the MHPGC Project.
- 7.1.1.4 The assessment is informed by the following chapters:
- **Volume 1, Chapter 2: Project Description, of the PEIR;**
 - **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR;**
 - **Volume 1, Chapter 5: Policy and Legislation, of the PEIR;**
 - **Volume 4, Chapter 5: Inter-related Effects, of the PEIR;**
 - **Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR;**
 - **Volume 3, Chapter 5: Traffic and Transport, of the PEIR.**
- 7.1.1.5 The chapter also draws on information contained within the following annexes:
- **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR;**
 - **Volume 1, Annex 4.2: Transboundary Screening, of the PEIR;**
 - **Volume 1, Annex 4.3: Cumulative Screening and Location Plan, of the PEIR;**
 - **Volume 3, Annex 7.1: Dust Risk Assessment Methodology of the PEIR.**
- 7.1.1.6 This PEIR offers a comprehensive overview of the MHPGC Project's potential environmental impacts and mitigation measures, presenting essential data to stakeholders for review and feedback. The PEIR has been informed by the ongoing pre-application consultation process.
- 7.1.1.7 Following consultation, comments will be reviewed and considered, where appropriate, in preparation of an Air Quality Chapter which will accompany the application to the Planning Inspectorate (PINS) for development consent.

7.2 Legislative and policy context

7.2.1 Overview

- 7.2.1.1 The full relevant legislation and policy context for the MHPGC Project has been detailed in **Volume 1, Chapter 5: Policy and Legislation, of the PEIR**. This section sets out the legislation and planning policy that is relevant to the air quality assessment.

7.2.2 Legislation

Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe (2008) (European Parliament and Council, 2008)

- 7.2.2.1 The European Union (EU) Directive 2008/50/EC on ambient air quality and cleaner air for Europe (the CAFE directive) came into force in May 2008 and was implemented in 2010 by Member States, including the UK (via the Air Quality Standards Regulations 2010 as amended).
- 7.2.2.2 The Directive contains a series of limit values for the protection of human health and critical levels for the protection of vegetation. For Member States, compliance with the EU Limit Values is mandatory, however, Member States can apply for a time extension for compliance, subject to approval of an action plan by the European Commission.

The European Union (Withdrawal Agreement) Act, 2020 (UK Parliament, 2020)

- 7.2.2.3 The EU (Withdrawal Agreement) Act 2020 ensures that the legally binding mandatory limit values originally set by the EU Directive 2008/50/EC on ambient air quality are maintained after withdrawal from the EU. The relevant limit values to the air quality assessment from construction road traffic are reported in **Table 7.1**.

The Environmental Protection Act, 1990 (UK Parliament, 1990)

- 7.2.2.4 The Environmental Protection Act 1990 provides the framework for the control of nuisance from dust and odour.

The Environment Act 2021 (UK Parliament, 2021)

- 7.2.2.5 The Environment Act 2021 established a legally binding duty on the UK Government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022, including PM_{2.5}. The PM_{2.5} targets have been established through the Environmental Targets Fine Particulate Matter Regulations 2023.

The Environmental Targets (Fine PM) (England) Regulations 2023 (UK Government, 2023)

- 7.2.2.6 The UK Government has set two legally binding targets for fine particulate matter (PM_{2.5}) in England through The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023/96). The targets are:
- An annual mean concentration target – a target of 10 micrograms per cubic metre (µg/m³) to be met across England by 2040;
 - A population exposure reduction target – a 35% reduction in population exposure by 2040 (compared to a base year of 2018).

The Environment Act 1995 (Part IV) (UK Parliament, 1995)

- 7.2.2.7 Part IV of the Environment Act 1995 requires the UK Government to publish an Air Quality Strategy and local authorities to review, assess and manage air quality within their areas. This is known as Local Air Quality Management (LAQM) in accordance with the LAQM Technical Guidance (LAQM.TG22) (Department for Environment, Food and Rural Affairs (Defra), 2025a).
- 7.2.2.8 Where a local authority's review and assessment of its air quality identifies that air quality is likely to exceed the Air Quality Objectives (AQOs), it must designate these areas as Air Quality Management Area (AQMAs) and draw up an Air Quality Action Plan (AQAP) setting out measures to reduce pollutant concentrations with the aim of meeting the AQOs. The AQOs relevant to the air quality assessment are reported in **Table 7.1**.

The Air Quality Standards Regulations 2010 as amended (UK Government, 2010)

- 7.2.2.9 The Air Quality Standards Regulations 2010 came into force on 11 June 2010 and transpose Directive 2008/50/EC on ambient air quality, including the pollutant limit values, into UK legislation. The Air Quality Standards Regulations 2010 impose a duty on the Secretary of State (SoS) to meet these limit values. Like Directive 2008/50/EC, the Air Quality Standards Regulations 2010 define ambient air as outdoor air and explicitly exclude workplaces and other places to which members of the public do not have regular access.

Wildlife and Countryside Act 1981 (UK Parliament, 1981)

- 7.2.2.10 This provides the basis for the regulatory framework for the designation of Sites of Special Scientific Interest (SSSIs). Sites in England are designated by Natural England if they have special interest by reason of any of their flora, fauna, or geological or physiographical features.

7.2.3 National policy context

National Air Quality Strategy, 2007 and 2023 (Defra, 2007; Defra, 2023)

- 7.2.3.1 The 2007 Air Quality Strategy establishes the policy for ambient air quality in the UK. It includes the AQOs for the protection of human health and vegetation for 11 pollutants.

- 7.2.3.2 Those AQOs for human health included as part of LAQM are prescribed in the Air Quality (England) Regulations 2000, as amended by the Air Quality (Amendment) (England) Regulations 2002, and the Air Quality Standards Regulations 2010, as amended by the Air Quality Standards (Amendment) Regulations 2016.
- 7.2.3.3 The Air Quality Standards (AQS) and AQOs relevant to the air quality assessment are reported in **Table 7.1**. They also include any Environmental Assessment Levels (EAL) set by the Environment Agency (Environment Agency, 2025). The identified limits are referred to in this chapter as Air Quality Assessment Levels (AQAL). For ecosystems, Critical Levels (CLe) have been set for protection from ambient concentrations of pollutants and Critical Loads (CL) for protection from acid and nitrogen deposition that are site specific; available at the Air Pollution Information System (APIS) website (CEH, 2026).

Table 7.1: Summary of relevant AQALs

Pollutant	Averaging period	AQS/AQO/EAL/CLe/CL	Receptor affected	AQAL ($\mu\text{g}/\text{m}^3$)	Not to be exceeded more than*
Nitrogen Dioxide (NO_2)	1 hour	AQS	Human	200	18 times per calendar year
	Annual	AQS	Human	40	N/A
Particulate Matter (PM_{10})	24 Hour	AQS	Human	50	35 times per calendar year
	Annual	AQS	Human	40	N/A
Particulate Matter ($\text{PM}_{2.5}$)	Annual	AQO	Human	20	N/A
		AQS	Human	10 to be met by 31 December 2040	N/A
Nitrogen Oxides (NO_x)	Annual	AQS	Ecology	30	N/A
	24 hour	CL _e	Ecology	75	N/A
Nitrogen Deposition	Annual	CL	Ecology	Site specific	N/A
Acid Deposition	Annual	CL	Ecology	Site specific	N/A
*N/A: Not applicables as there are no exceedances of this AQAL allowed.					

- 7.2.3.4 The 2007 Air Quality Strategy also introduced a new policy framework for tackling $\text{PM}_{2.5}$ which included an exposure reduction target and a 'backstop' annual mean AQO. The exposure reduction target is focussed on reducing average concentrations across the most polluted urban areas and is therefore not applicables to the MHPGC Project.
- 7.2.3.5 The AQAL apply to external air where there is relevant exposure to the public over the associated averaging periods within each AQAL. Guidance is provided within LAQM.TG22 issued by Defra for Local Authorities, on where the AQAL apply. The AQALs do not apply in workplace locations, to internal air or where people are unlikely to be regularly exposed (i.e., centre of roadways).
- 7.2.3.6 The Limit Values are mandatory whereas the AQOs are policy objectives. Local authorities are not required to achieve them but must demonstrate effort of working towards compliance. In addition, the Limit Values apply in all locations except:
- where members of the public do not have access and there is no fixed habitation;
 - on factory premises or at industrial installations;
 - on the carriageway/central reservation of roads except where there is normally pedestrian access.

The 2023 Air Quality Strategy (Defra, 2023)

- 7.2.3.7 In April 2023, the UK Government published Air Quality Strategy: Framework for Local Authority Delivery, which supersedes the 2007 Strategy in respect of England only. It provides a strategic framework for local authorities in England and fulfils the statutory requirement to publish an Air Quality Strategy every 5 years.

Clean Air Strategy 2019 (Defra, 2019)

- 7.2.3.8 Defra published a new Clean Air Strategy 2019 in January 2019, setting out how the UK will significantly reduce harmful air pollutant emissions by 2020 and 2030.
- 7.2.3.9 The Clean Air Strategy contains an intention of working towards the 2005 WHO guideline value for PM_{2.5} of 10µg/m³.

The Environmental Improvement Plan, 2025 (Defra, 2025b)

- 7.2.3.10 The Environmental Improvement Plan (EIP) 2025 is England's updated, cross-government roadmap for achieving the legally binding targets set by the Environment Act 2021, aimed at delivering improvements across a range of environmental areas, including air quality.
- 7.2.3.11 The following reductions in pollutant concentrations are to be met by 2050 (vs. 2005 baseline):
- PM_{2.5} - 46%;
 - NO₂ - 73%;
 - Ammonia (NH₃) - 16%;
 - Non-methane volatile organic compounds (NMVOCs) - 39%.
- 7.2.3.12 A 30% reduction in exposure to PM_{2.5} compared to 2018 and an annual mean PM_{2.5} limit of 10µg/m³ by 2030 are proposed.

National Policy Statements

- 7.2.3.13 National Policy Statements (NPS) set out the primary policy framework for a Development Consent Order (DCO) under which the MHPGC Project will be considered. This framework includes guidelines, requirements and criteria that the MHPGC Project must meet to obtain consent and proceed with development. It provides details of the NPS relevant to air quality and how and where they are covered in the PEIR:
- NPS for energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2025a);
- 7.2.3.14 The NPS for renewable energy infrastructure (EN-3) (DESNZ, 2025b) and the NPS for electricity networks infrastructure (EN-5) (DESNZ, 2025c) have no applicable or additional policy in relation to this topic.

Table 7.2: Summary of the NPS provisions relevant to air quality

Summary of relevant NPS provisions	How and where considered in the PEIR
NPS EN-1	
NPS EN-1 includes generic guidance on the assessment of air quality impacts for major energy projects: <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 Environmental Statement."</i> (paragraph 5.2.8) This requires the ES to describe: - existing air quality concentrations and the relative change in air quality from existing levels; - any significant air quality effects, mitigation action taken and any residual effects, distinguishing between the project stages and taking account of	The construction of the onshore elements of the MHPGC Project has the potential to generate air quality impacts. Effects associated with the O&M and decommissioning phases have been scoped out, as outlined in Section 7.6.1. The MHPGC Project air quality emissions, including dust, are associated with construction activities, combustion sources from construction plant equipment and construction traffic. These emissions have been considered within Section 7.8.

Summary of relevant NPS provisions	How and where considered in the PEIR
NPS EN-1	
<i>any significant emissions from any road traffic generated by the project;</i> <i>- the predicted absolute emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied; and</i> <i>- any potential eutrophication impacts.” (paragraph 5.2.9)</i>	Embedded mitigation is detailed in Section 7.7. These measures have been incorporated into the project design to ensure that no significant air quality effects are anticipated.

National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2026)

7.2.3.15 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2026) has the potential to be considered important and relevant to the SoS consideration of the MHPGC Project. The revised NPPF published in December 2024 and amended in February 2025 and in August 2026. It sets out the Government’s planning policies for England and how they are expected to be applied.

7.2.3.16 **Table 7.3** provides details of the elements of the NPPF that are relevant to air quality and how and where they are covered in the PEIR.

Table 7.3: Summary of NPPF requirements relevant to air quality

NPPF	How and where this is considered in the PEIR
A key part of the UK Government’s reforms to make the planning system less complex and more accessible. The NPPF acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications. DP3: Key principles for well-designed places states: <i>“2. To create well-designed places, development proposals should also reflect relevant aspects of the following principles, as appropriate to the nature of the development and its location : [...]</i> <i>c. Nature: incorporate and/or connect to a network of high quality, accessible, multifunctional green infrastructure to provide opportunities for recreation and healthy living, strengthen habitats, improve climate change resilience and improve air and water quality. This should include maintaining and enhancing tree cover and incorporating sustainable drainage systems in accordance with policies N3 and F8.”</i> TR3: Locating development in sustainable locations states <i>“1. So that development is located where it can support sustainable patterns of movement, enable good accessibility for different users and make the most of existing and proposed transport infrastructure, development proposals should reflect the following principles, taking into account the vision for the site, the type of development and its location: [...]</i> <i>d. The environmental impacts of traffic and transport infrastructure should be identified, assessed and taken into account – including taking opportunities to avoid or mitigate any adverse environmental effects, and to secure net environmental gains such as reductions in air pollution;”</i> P3: Living conditions and pollution states:	The construction of the onshore elements of the MHPGC Project has the potential to generate air quality impacts. Effects associated with the O&M and decommissioning phases have been scoped out, as outlined in Section 7.6.1. Embedded mitigation is detailed in Section 7.7. These measures have been incorporated into the project design to ensure that no significant air quality effects are anticipated.

NPPF	How and where this is considered in the PEIR
<i>"2. Within this context development proposals should: [...]</i> <i>c. Sustain and contribute to compliance with relevant limit values or national objectives and targets for air pollutants including PM2.5. Development proposals should take account of Air Quality Management Areas and be consistent with the objectives of relevant Air Quality Action Plans, Clean Air Plans and Local Air Quality Strategies;"</i>	

7.2.4 Local policy context

- 7.2.4.1 The MHPGC Project lies within the jurisdiction of Durham County Council (DCC), however the closest and most representative air quality monitoring locations are located within the administrative boundary of Sunderland City Council (SCC). The following local policy relevant to air quality has informed the assessment of preliminary effects in this chapter, their relevance to the MHPGC Project is outlined in **Table 7.4**.

County Durham Plan Adopted 2020 (DCC, 2020)

- 7.2.4.2 The County Durham Plan helps manage and improve air quality by guiding where development happens, reducing pollution from traffic, and protecting sensitive environments. It ensures new homes, jobs, and infrastructure are planned in ways that limit harmful emissions and support healthier communities.

Durham Air Quality Action Plan 2025-2030 (DCC, 2025)

- 7.2.4.3 The Durham AQAP 2025 to 2030 is the statutory plan prepared by DCC under the LAQM duties set out in the Environment Act 1995.
- 7.2.4.4 It outlines the actions DCC will take between 2025 and 2030 to reduce harmful air pollutants, particularly in areas where air-quality objectives have been exceeded or are at risk - namely the County's AQMAs. The MHPGC Project is not located within an AQMA.

Sunderland City Council Core Strategy and Development Plan 2015-2033 (SCC, 2020)

- 7.2.4.5 The Core Strategy and Development Plan (CSDP) 2015–2033, adopted in 2020, is SCC's statutory local development plan. There are no AQMAs declared by SCC.
- 7.2.4.6 It sets the strategic planning policies for growth, housing, infrastructure, transport, and environmental protection across Sunderland up to 2033. All planning decisions in Sunderland must be taken in accordance with the CSDP unless material considerations indicate otherwise.

Table 7.4: Local policy relevant to air quality

Policy description	How and where considered in the PEIR
County Durham Plan Policy 31: Amenity and Pollution: <i>"Development will be permitted where it can be demonstrated that there will be no unacceptable impact, either individually or cumulatively, on health, living or working conditions or the natural environment and that can be integrated effectively with any existing business and community facilities. Development which has the potential to lead to, or be affected by, unacceptable levels of air quality, inappropriate odours, noise and vibration or other sources of pollution, either individually or cumulatively, will not be permitted including where any identified mitigation cannot reduce the impact on the environment, amenity of people or human health to an acceptable level."</i>	The construction of the onshore elements of the MHPGC Project has the potential to generate air quality impacts. Effects associated with the O&M and decommissioning phases have been scoped out, as outlined in Section 7.6.1. The MHPGC Project air quality emissions, including dust, are associated with construction activities, combustion sources from construction plant equipment and construction

Policy description	How and where considered in the PEIR
Durham Air Quality Action Plan CDP Policy 31: <i>“Aims to restrict the development which has the potential to lead to, or be affected by, unacceptable levels of air quality and other sources of pollution. Any major planning or development schemes within the catchment area of the Durham City Air Quality Management Area will need to be assessed to determine any impact on air quality and showing any ameliorating design measures.”</i> SCC CSDP Policy HS1: Quality of life and amenity: <i>“1. Development must demonstrate that it does not result in unacceptable adverse impacts which cannot be addressed through appropriate mitigation, arising from the following sources:</i> <i>i) air quality; ii) noise; iii) dust; iv) vibration; v) odour; vi) emissions; vii) land contamination and instability; viii) illumination; ix) run-off to protected waters; or x) traffic.</i> <i>2. Development must ensure that the cumulative impact would not result in unacceptable adverse impacts on the local community; and</i> <i>3. Development will not normally be supported where the existing neighbouring uses would unacceptably impact on the amenity of future occupants of the proposed development”.</i>	traffic. These emissions have been considered within Section 7.8. Anticipated construction traffic from the MHPGC Project has been screened and assessed in conjunction with the location of sensitive receptors, considering the nature and duration of the construction activities (see Section 7.8.2). Commitments adopted as part of the MHPGC Project are detailed in Section 7.7. These measures have been incorporated into the project design to ensure that no significant air quality effects are anticipated.

7.2.5 Relevant guidance

- 7.2.5.1 The preliminary assessment has been carried out in accordance with the following guidance documents:

World Health Organisation, Air Quality Guidelines (WHO, 2021)

- 7.2.5.2 The World Health Organisation (WHO) Air Quality Guidelines (AQG) serve as a global target for national, regional and city governments to work towards improving their citizens' health by reducing air pollution.
- 7.2.5.3 The WHO AQG are a set of evidence-based recommendations of limit values for specific air pollutants developed to help countries achieve air quality that protects public health. The first release of the guidelines was in 1987. Since then, several updated versions have been published, and the latest global version was published in 2005.
- 7.2.5.4 The 2021 update of the WHO AQG is in response to the real and continued threat of air pollution to public health.

Planning Practice Guidance (Ministry of Housing, Communities and Local Government, 2019)

- 7.2.5.5 The Planning Practice Guidance (PPG) was launched as an online resource in March 2014 to support the NPPF and has separate guidance on air quality. Paragraph 001, Reference 32-001-20191101 06 (revision date 1 November 2019) of the PPG provides the following summary as to why air quality is a consideration for planning:
- “... It is important that the potential impact of new development on air quality is taken into account in planning where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified.”*
- 7.2.5.6 The PPG identifies when air quality could be relevant for a development management process, provides guidance on how detailed an assessment needs to be and provides guidance on how an impact on air quality can be mitigated.

Defra, LAQM.TG22 (Defra, 2025a)

- 7.2.5.7 The technical guidance is designed to support local authorities in carrying out their duties under the Environment Act 1995 and includes information on monitoring and modelling air quality.

Institute of Air Quality Management and Environmental Protection UK, Land use Planning and Development Control: Planning for Air Quality (2017) (IAQM, 2017)

- 7.2.5.8 Environmental Protection UK (EPUK), together with the Institute of Air Quality Management (IAQM), produced guidance in 2017 on how air quality impacts should be assessed within the land-use planning and development control process. This guidance provides clear criteria to determine when a detailed air quality assessment is required and a methodology for assessing the significance of air quality effects.

Natural England, Air pollution and development: advice for local authorities. How to assess sector-specific planning applications that could affect air quality on a protected site (Natural England, 2025).

- 7.2.5.9 Natural England's guidance on air pollution and development provides a framework for assessing planning applications that may affect protected sites. It covers screening, detailed assessment, and sector-specific considerations, aiming to improve the consistency of Ecological Air Quality and Ammonia Assessments. The guidance is a material planning consideration and applies to developments involving air emissions, including developments generating traffic.

IAQM, Guidance on the assessment of dust from demolition and construction (2024) (IAQM, 2024)

- 7.2.5.10 The IAQM produced guidance to assist in the assessment of air quality impacts from demolition and construction activities. This guidance provides a consistent methodology for assessing the risks of dust impacts from demolition and construction activities and for identifying the necessary mitigation which should be applied to avoid significant air quality effects.

LA105 Design Manual for Roads and Bridges (National Highways, 2024)

- 7.2.5.11 LA105 of the Design Manual for Roads and Bridges (DMRB) sets out the methodology for assessing the impacts of emissions from schemes on the Strategic Road Network. The guidance defines the criteria for determining whether a detailed air quality assessment is required, including the identification of an 'affected road'. It also specifies that an air quality assessment must be undertaken where sensitive receptors, including European designated sites, are located within 200m of an 'affected road'.

7.3 Consultation and engagement

7.3.1 Scoping

- 7.3.1.1 A Scoping Report for the MHPGC Project was issued to the PINS and Marine Directorate – Licencing Operations Team (MD-LOT) in February 2025 (RPS, 2025). Following consultation with the appropriate statutory bodies, PINS (on behalf of the SoS) and MD-LOT both provided Scoping Opinions in March 2025 (PINS, 2025; MD-LOT, 2025, respectively).
- 7.3.1.2 **Table 7.5** sets out the key comments raised during the scoping process specific to air quality, with details of how these comments have been addressed within the PEIR. No further consultation with respect to air quality has been undertaken.

Table 7.5: Summary of scoping responses relevant to air quality

Comment	How and where considered in the PEIR
Natural England	
Air quality in the UK has improved over recent decades but air pollution remains a significant issue. (...) A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on	The construction of the onshore elements of the MHPGC Project has the potential to generate air quality

Comment	How and where considered in the PEIR
biodiversity. The Government's Clean Air Strategy also has a number of targets to reduce emissions including to reduce damaging deposition of reactive forms of nitrogen by 17% over England's protected priority sensitive habitats by 2030, to reduce emissions of ammonia against the 2005 baseline by 16% by 2030 and to reduce emissions of NO_x and SO₂ against a 2005 baseline of 73% and 88% respectively by 2030. Shared Nitrogen Action Plans (SNAPs) have also been identified as a tool to reduce environmental damage from air pollution. (...) The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or SNAPs, which may be being developed or implemented to mitigate the impacts of air quality. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System. Natural England has produced guidance for public bodies to help assess the impacts of road traffic emissions to air quality capable of affecting European Sites. Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations - NEA001. Natural England cited websites where information on air pollution modelling, screening and assessment can be found.	impacts. Effects associated with the O&M and decommissioning phases have been scoped out, as outlined in Section 7.6.1. Anticipated construction traffic from the MHPGC Project has been screened and assessed in conjunction with the location of sensitive receptors and by considering the nature and duration of the construction activities (see Section 7.8.2). The screening also considered background NO_x concentrations and deposition at the relevant ecological sites (see Table 7.13) and the assessment uses information from APIS. Commitments adopted as part of the MHPGC Project are detailed in Section 7.7. These measures have been incorporated into the project design to ensure that no significant air quality effects are anticipated.
Internationally designated sites - Impacts on: • Castle Eden SAC; • Teesmouth and Cleveland Coast SPA and Ramsar Site; • Thrislington SAC. The ES and HRA must examine the possibility of indirect impacts to these sites resulting from pollution, hydrological and air quality changes.	Natural England, published a new guidance in October 2025 'Air Pollution and development: advice on local authorities' (Natural England, 2025). This new guidance covers provisions under the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) and the Wildlife and Countryside Act 1981. There is one international designated site (Durham Coast Special Area of Conservation (SAC)) that requires further assessment as a result of dust emissions. There are no international designated sites that fall within 200m of an 'affected road' following the LA105 guidance (National Highways, 2024) (see paragraph 7.4.5.7).
A buffer of 50m has been used to identify international and nationally designated site for the assessment of effects on air quality. This is based on IAQM (2024) guidance. Natural England has produced guidance for public bodies to help assess the impacts of road traffic emissions to air quality capable of affecting European Sites. Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations - NEA001. This guidance notes that for road traffic emissions the distance criteria applied is 200m. Natural England recommends for the	The assessment has considered potential construction dust impacts on ecological receptors, within 50m of the MHPGC PEIR Red Line Boundary: Onshore, in accordance with the IAQM (2024) guidance. The relevant designations are presented in Table 7.12. Anticipated construction traffic, from the MHPGC Project has been

Comment	How and where considered in the PEIR
sections of the cables route/landfall site options which will involve construction traffic movements within 200m of all designated sites, the potential air quality impacts due to road traffic during the construction phase will need to be considered. Ammonia emissions from road traffic could make a significant difference to nitrogen deposition close to roads and should be included within the assessment.	screened using the criteria set in the IAQM and EPUK guidance (IAQM, 2017). The screening considered ecological receptors within 200m from any 'affected road' (i.e. road link that cannot be screened out). Construction traffic has been assessed in conjunction with the location of sensitive receptors and by considering the nature and duration of the construction activities (see Section 7.8.2). The screening also considered background NO_x concentrations and deposition at the ecological sites (see Table 7.13).
PINS	
Emissions of air pollutants from traffic on roads (operation) - The Inspectorate agrees that it is unlikely that there would be a significant change in vehicle flows during operation and therefore it is also unlikely that significant effects would occur in respect of air quality. The ES should confirm that the anticipated road vehicle movements are below the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) screening values and provide the outcome of the operational screening assessment. Should the screening values be exceeded then an assessment of likely significant effects should be provided.	Anticipated operational traffic, from the MHPGC Project has been screened using the IAQM and EPUK guidance (IAQM, 2017). Section 7.6.1 presents the rationale for this screening outcome. Specifically, that there are no significant emissions to air during the O&M phase
Emissions of air pollutants from construction plant equipment on site (operation and decommissioning) - The Scoping Report proposes to scope out onshore plant generated impacts during O&M and decommissioning on the basis that the proposed development does not include proposals for any onshore plant which could generate air emissions. Any pollutants generated during decommissioning are anticipated to be less than half the amount generated during construction. On the basis that no significant emissions are likely to arise from operational plant, and any pollutants generated during decommissioning will be less than during construction, the Inspectorate agrees that this matter can be scoped out of the ES.	Agreement in screening out of impacts associated with the emission of air pollutants from construction plant equipment on site during O&M and decommissioning is noted. Section 7.6.1 presents the rationale for this screening outcome. Specifically, that there are no significant emissions to air during the O&M phase and with respect to the decommissioning phase, impacts are anticipated to be less than the construction phase and are therefore also screened out.
Emissions of odour from (all phases) - The Inspectorate is content that there is unlikely to be significant emissions of odour during construction and therefore agrees that this matter can be scoped out of the air quality assessment. The Inspectorate notes the applicant's intention at commitment MM-49 to avoid areas of historic landfill through design. If historic landfill sites cannot be avoided, then an assessment of LSE will need to be included within the ES.	The MHPGC PEIR Red Line Boundary: Onshore does not include any historical landfill sites. Accordingly, the impact has been scoped out, see Section 7.6.1.
Guidance - The applicant's attention is drawn to the Defra advice 'PM_{2.5} Targets: Interim Planning Guidance'. The ES should explain	Under the Environmental Targets (Fine Particulate Matter) (England)

Comment	How and where considered in the PEIR
how key sources of air pollution within the proposed development have been identified and how action has been taken to minimise emissions of PM_{2.5} or its precursors.	Regulations 2023 there is a PM_{2.5} population exposure reduction target which aims to achieve a 35% reduction in population exposure to PM_{2.5} compared to the 2018 baseline by 31 December 2040, with an interim target of 22% by the end of January 2028. This is a national target which does not directly apply locally as exposure will reduce in some places more than others, and which does not directly relate to individual developments. The MHPGC Project construction phase is not associated with emissions of PM_{2.5}, with the key pollutant being dust (i.e. particulate matter with larger diameter). In addition, air quality effects associated with the O&M and decommissioning phases have been scoped out, as outlined in Section 7.6.1. Commitments adopted as part of the MHPGC Project are detailed in Section 7.7. These measures have been incorporated into the project design to ensure that no significant air quality effects are anticipated and address dust emissions.
UK Health Security Agency	
One of the applicant's screening decisions is to scope out emissions to air of pollutants and dust that arise from the decommissioning phase as these are estimated to be half or less than half of the impact from commissioning give that the cables will be left in situ. We note from the information on the health chapter that air quality modelling will be carried out. If this is undertaken, we recommend that the assessment of emissions to air from decommissioning works during the decommissioning phase is informed by the results of this air quality modelling.	Emissions to air of pollutants and dust that arise from the decommissioning phase have not been modelled. The assessment has assumed that any decommissioning impacts will not exceed those assessed for the construction phase. Therefore, a qualitative assessment and decommissioning specific mitigation is detailed in Section 7.8.3.

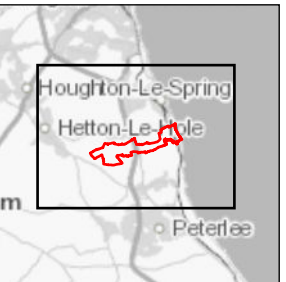
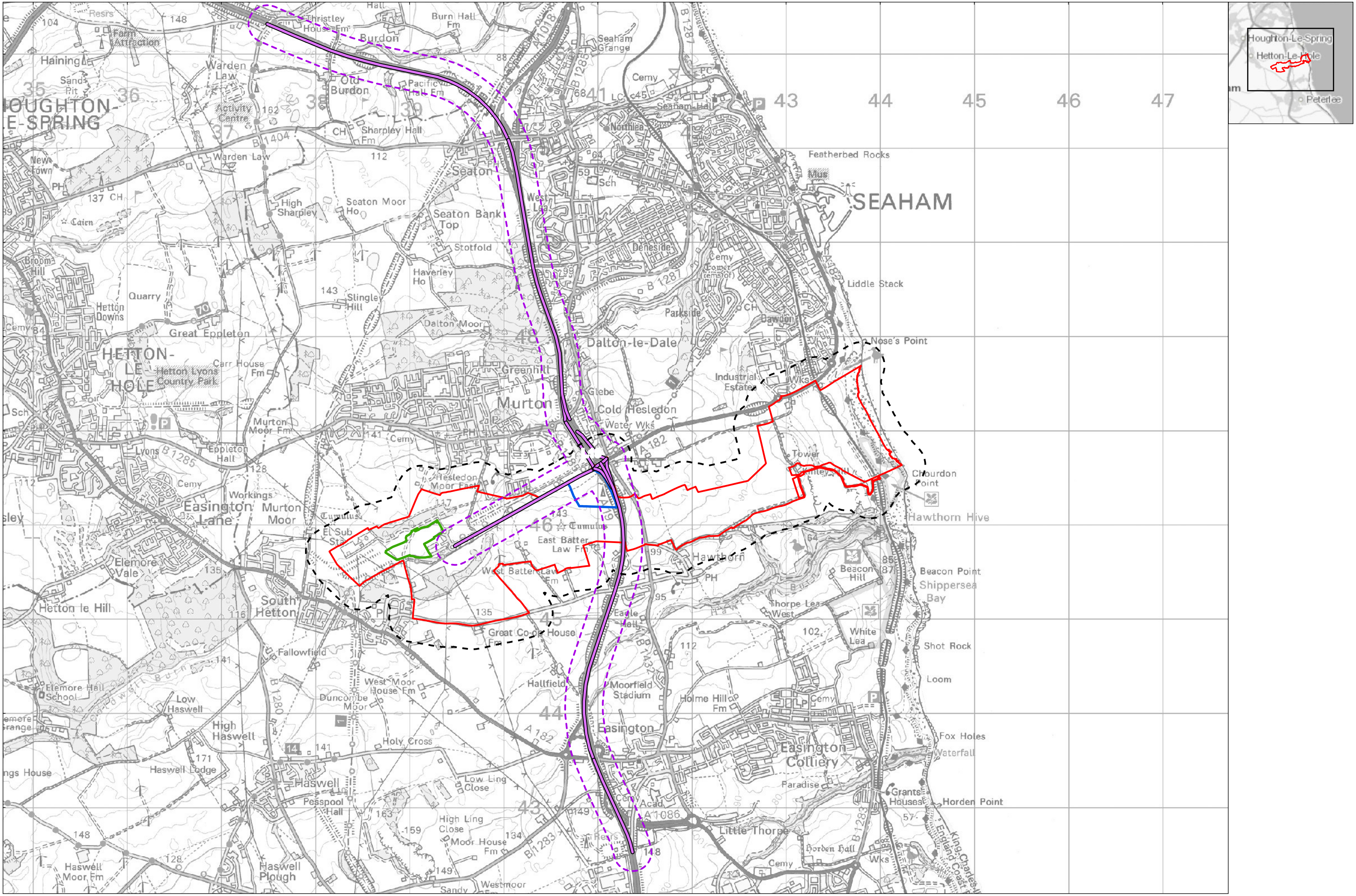
7.4 Baseline Characterisation

7.4.1 Overview

- 7.4.1.1 **Volume 1, Chapter 2: Project Description, of the PEIR** sets out the description of the MHPGC Project and **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information.
- 7.4.1.2 This section describes the methods and data sources used to characterise the baseline for air quality within the study area and describes the existing baseline characteristics.

7.4.2 Air quality Study Area

- 7.4.2.1 Guidance on the assessment of dust from demolition and construction (IAQM, 2024) indicates the distance from a dust omitting source that there could be potential nuisance dust and particulate matter (PM) (with diameters of 10 micrometres or smaller (PM₁₀)) impacts to human health receptors.
- 7.4.2.2 The study area for the construction phase considers construction dust and construction traffic. The dust and amenity assessment study area includes:
- a 250m buffer from the MHPGC PEIR Red Line Boundary: Onshore for dust. This is made up of 20m, 50m, 100m and 250m buffers.
 - a 50m buffer from the routes anticipated to be used by construction vehicles on the public highway and up to 250 m from construction site entrances/exits.
- 7.4.2.3 These buffers were used to determine the receptor sensitivity and magnitude of impact as detailed in the **Volume 3, Annex 7.1: Dust Risk Assessment Methodology, of the PEIR**.
- 7.4.2.4 Road traffic emissions were screened in accordance with guidance published jointly by the IAQM and EPUK (IAQM, 2017) and in accordance with LA105 guidance (National Highways, 2024). The study area for human health and ecological receptors has been defined as a 200m buffer around roads (Natural England, 2025) which would experience a significant increase in development traffic (defined in **Section 7.5.3**) that may lead to adverse effects on local air quality.
- 7.4.2.5 The location and geographic extent of the Air quality Study Area, presenting the dust risk assessment boundary and a 200m buffer around the road links that have been screened as an 'affected road', is presented in **Figure 7.1**.



7.4.3 Potential receptors

- 7.4.3.1 The spatial and temporal scope of the assessment enables the identification of receptors which may experience a change in air quality as a result of MHPGC Project. The receptors identified that may experience likely significant effects for air quality are outlined in **Table 7.6**.

Table 7.6: Key receptors

Receptor group	Receptors included in this group
Human receptors	Human receptors are located close to the MHPGC PEIR Red Line Boundary: Onshore, there are also residential receptors and commercial receptors located within the MHPGC PEIR Red Line Boundary: Onshore (see Figure 7.3). Receptors include residential properties, schools, medical facilities, and commercial properties. For assessing impacts from dust, it is sufficient to count the number of receptors within various distance bands (detailed in paragraph 7.4.2.2) of the proposed MHPGC PEIR Red Line Boundary: Onshore. For the road traffic screening (see Section 7.8.2), there is a small number of residential receptors identified within 200m of road links that exceed the IAQM and EPUK screening criteria (IAQM, 2017) (detailed in paragraph 7.8.2.20).
Ecological receptors	For assessing impacts from dust, ecological receptors within 50 m of the MHPGC PEIR Red Line Boundary: Onshore have been considered (as detailed in Table 7.12). For the road traffic screening (see Section 7.8.2), ecological receptors that have been identified within 200m of an affected road (see Table 7.12), as defined in the LA105 guidance (National Highways, 2024) and referenced in the Natural England guidance (Natural England, 2025).

7.4.4 Baseline Data Sources

Desk study

- 7.4.4.1 Background concentrations typically account for a significant share of the total pollutant levels. It is therefore essential to use a realistic background concentration in assessments to prevent inaccurate outcomes. Such data can be sourced from local monitoring programmes or from national datasets, including government resources such as the Defra UK Air Information Resource (AIR) pollution maps.
- 7.4.4.2 To establish baseline air quality conditions in the Air Quality Study Area, relevant data was reviewed and assessed. Data was obtained from the sources detailed in **Table 7.7**, in line with the proposed approach set out in the MHPGC Project Scoping Report.

Table 7.7: Summary of key desk reports

Title	Source	Year	Author
Durham County Council 2025 Air Quality Annual Status Report (ASR) (DCC, 2025)	Durham County Council website	2025	Durham County Council
Sunderland City Council 2025 Air Quality ASR (SCC, 2025)	Sunderland City Council website	2025	Sunderland City Council
Defra projections of pollutant concentrations for years from 2021 to 2040 for each 1 kilometre (km) grid square in the UK (Defra, 2022)	UK Air Information Source - Background Mapping data for local authorities - 2021	2021	Defra
Air Pollution Information System (APIS)	APIS website https://www.apis.ac.uk/	2023	APIS

Site specific surveys

- 7.4.4.3 Sufficient local authority monitoring data is available to allow the assessment to be completed without the need for additional field study/data collection. Therefore, a site-specific air quality monitoring survey was not undertaken.

Data limitations and assumptions

- 7.4.4.4 The assessment has relied on data provided by DCC, SCC, Defra and APIS. It has been assumed that these data sets have been reported correctly and equipment calibrated.

7.4.5 Overview of existing baseline environment

Local air quality management

- 7.4.5.1 DCC and SCC manage air quality within their administrative areas as part of their responsibilities under the LAQM regime. The closest AQMA is the DCC AQMA located over 8km west of the MHPGC PEIR Red Line Boundary: Onshore. The AQMA was declared due to exceedances of the annual mean objective of NO₂.
- 7.4.5.2 DCC and SCC operate both continuous automatic and passive monitoring of air quality at several locations within their respective jurisdictions. A summary of pollutant concentrations recorded at the closest monitoring sites to the MHPGC Project, all located within SCC, are presented in **Table 7.8**, **Table 7.9** and **Table 7.10**.

Table 7.8: Monitored annual-mean NO₂ concentrations

Site ID	Site Type	Distance from MHPGC PEIR Red Line Boundary: Onshore (km)	NO ₂ concentrations (µg/m ³)				
			2020	2021	2022	2023	2024
Passive diffusion tube monitoring							
125	Roadside	3	22.8	20.3	16.6	16.2	16.1
Continuous automatic monitoring							
CM2	Urban Background	8	12	No data	11	11	10
AQAL			40				

Table 7.9: Automatically monitored annual-mean PM₁₀ concentrations

Site ID	Site Type	Distance from MHPGC PEIR Red Line Boundary: Onshore (km)	PM ₁₀ concentrations (µg/m ³)				
			2020	2021	2022	2023	2024
CM2	Urban Background	8	11	11	13	10	11
AQAL			40				

Table 7.10: Automatically monitored annual-mean PM_{2.5} concentrations

Site ID	Site Type	Distance from MHPGC PEIR Red Line	PM _{2.5} concentrations (µg/m ³)				
			2020	2021	2022	2023	2024

		Boundary: Onshore (km)					
CM2	Urban Background	8	6	6	8	6	7
AQAL			20				

7.4.5.3 Air pollutant concentrations during 2020 and 2021 were affected by reductions in travel due to the Covid-19 pandemic. The automatic monitoring data have not been considered explicitly in the assessment but are presented to demonstrate status of compliance with the AQALs, with monitoring data in during 2022 – 2024 broadly similar with the data recorded in 2020 and 2021. The data presented in **Table 7.8**, **Table 7.9** and **Table 7.10** indicate that NO₂, PM₁₀ and PM_{2.5} concentrations are below their respective AQALs. Pollutant concentrations recorded at urban background monitoring sites are likely to be less representative of the local baseline air quality within the MHPGC PEIR Red Line Boundary: Onshore, given its rural location.

Defra background maps

7.4.5.4 Defra provides modelled predictions of background concentrations (Defra, 2022) of air pollutants over the whole of the UK with a grid resolution of 1km². Background concentrations refer to pollution levels observed away from specific sources such as roads and industry.

7.4.5.5 The range of mapped background concentrations projected to 2026 across every 1km² grid that falls within the MHPGC PEIR Red Line Boundary: Onshore and the Air quality Study Area is presented in **Table 7.11**.

Table 7.11: Defra annual mean background concentration for 2026

Location	NO _x (µg/m ³)	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)
Air quality Study Area	4.2 – 5.8	4.0 – 6.5	7.6 - 12.5	4.2 - 5.8
AQAL	30	40	40	20

7.4.5.6 **Table 7.11** indicates that the background concentrations from each pollutant are all well below their respective AQALs.

Ecological receptors

7.4.5.7 **Table 7.12** presents the ecological receptors that have been screened as requiring further assessment due to dust and traffic emissions. The qualifying features for these sites are presented therein and in **Table 3.18, Volume 3, Chapter 3: Terrestrial Ecology and Terrestrial and Intertidal Ornithology**, of the PEIR. The location of the ecological sites are shown in **Figure 7.2**. The IAQM (2024) guidance states that ecological receptors that support vascular plant species, that fall within the Vascular Plant Red Data List for Great Britain, are considered sensitive to dust emissions. All ecological sites presented in **Table 7.12** include plant species within their habitats that are sensitive to dust emissions.

Table 7.12: Designated sites

Designated site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant features	Qualifying	Screening impacts
Durham Coast SAC	Within the MHPGC PEIR Red Line Boundary: Onshore	Vegetated sea cliffs of Atlantic and Baltic Coasts comprising complex mosaic of		Dust emissions

Designated site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant features	Qualifying	Screening impacts
		paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.		
Hawthorn Dene SSSI	Within 50m of the MHPGC PEIR Red Line Boundary: Onshore	- Semi-natural broadleaved woodland on magnesian limestone; - Magnesian limestone grassland; - Tall fen.		Dust emissions
Hesledon Moor West SSSI	Within the MHPGC PEIR Red Line Boundary: Onshore	- Unimproved neutral pasture; - Base-rich mire.		Dust emissions
Hesledon Moor East SSSI	- Within the MHPGC PEIR Red Line Boundary: Onshore; - Within 200m from and 'affected road'.MHPGC PEIR Red Line Boundary: Onshore	Fen, carr and heathland communities on acidic glacial drift overlying magnesian limestone.		Dust emissions Traffic emissions
Durham Coast SSSI	Within the MHPGC PEIR Red Line Boundary: Onshore	- Paramaritime magnesian limestone vegetation. - Species-rich dune system.		Dust emissions
Noses Point Local Nature Reserve (LNR)	Within the MHPGC PEIR Red Line Boundary: Onshore	Magnesian limestone bedrock has given rise to a rare form of grassland with unique populations of plants and animals.		Dust emissions
Hawthorn Dene Ancient Woodland (AW)	Within 50m of the MHPGC PEIR Red Line Boundary: Onshore	Semi-natural broadleaved woodland on magnesian limestone.		Dust emissions
Coop House Wood Local Wildlife Site (LWS)	- Within the MHPGC PEIR Red Line Boundary: Onshore; - Within 200m from and 'affected road'.	Damp woodland.		Dust emissions Traffic emissions
Hesledon Moor West LWS	Within the MHPGC PEIR Red Line Boundary: Onshore	- Acid pasture. - Alder and willow carr with tall herb and marsh communities.		Dust emissions
Hawthorn Quarry LWS	Within the MHPGC PEIR Red Line Boundary: Onshore	Quarry with plants typical of magnesian limestone.		Dust emissions

Designated site	Distance to the MHPGC PEIR Red Line Boundary: Onshore	Relevant features	Qualifying	Screening impacts
Cold Hesledon Meadow LWS	- Within 50m of the MHPGC PEIR Red Line Boundary: Onshore; - Within 200m from and 'affected road'	- Damp meadow. - Magnesian limestone grassland on limestone cliff.		Dust emissions Traffic emissions
Hesledon Moor East LWS	Within the MHPGC PEIR Red Line Boundary: Onshore	Semi-improved grassland with fringing scrub next to stream and marsh vegetation.		Dust emissions
Dawdon Dene LWS	Within 200m from and 'affected road'.	Ancient woodland (mixed deciduous).		Traffic emissions

7.4.5.8 **Table 7.13** presents the background ambient NO_x concentrations and nitrogen and acid deposition for Hesledon Moor East SSSI, Cold Hesledon Meadow LWS, Coop House Wood LWS and Dawdon Dene LWS, located within 200m of an 'affected road' (National Highways, 2024). Ambient background pollutant NO_x concentrations at the three ecological sites are comfortably below the AQAL. Nitrogen deposition background concentrations are above the minimal critical load, the case for many ecological receptors in the UK, and below the acid deposition critical load. Background nitrogen deposition exceeds the assigned critical loads across most ecological designations in the UK (JNCC, 2025).

Table 7.13: Background concentration and deposition at ecological sites

Designated site	Qualifying feature	Annual (µg/m ³)	NO _x	Nitrogen deposition (kgN/ha/yr) ^a	Acid deposition (keq/ha/yr) ^b
Hesledon Moor East SSSI	Unimproved neutral pasture Base-rich mire.	7.3 (30)		11.4 (10 – 20)	0.9 (CLminN*: 1.071)
Coop House Wood LWS	Damp woodland	7.0 (30)		19.2 (10 – 15)	1.5 (CLminN: No estimate available)
Cold Hesledon LWS	Damp meadow	9.5 (30)		10.7 (10 – 20)	0.9 (CLminN: No estimate available)
Dawdon Dene LWS	Ancient woodland (mixed deciduous)	9.5 (30)		17.5 (10 – 15)	1.4 (CLminN: No estimate available)

(): Applicable AQALs (i.e. critical levels or site-specific critical loads)

^a Nitrogen deposition critical load is given as a range and have units of kgN/ha/yr. Generally, the lower end of the range should be used as a conservative assessment.

^b The critical load is specified for acidification by APIS, via the use of three critical load parameters. The CLminN is the parameter used when considering current background acid deposition concentrations.

7.4.6 Future baseline conditions

- 7.4.6.1 During the 35-year operational lifetime of the MHPGC Project, the Air quality Study Area baseline can be expected to evolve both on a natural basis and in response to global trends such as climate change and other anthropogenic activities. The Infrastructure Planning (EIA) Regulations 2017 require that *"an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge"* is included. Therefore, an assessment of future baseline conditions, in the absence of the MHPGC Project, has been undertaken and is described within this section.
- 7.4.6.2 Defra projected background maps are utilised to obtain predicted future pollution concentrations of NO₂, PM₁₀ and PM_{2.5}.
- 7.4.6.3 The predicted operation date for the MHPGC Project is 2038. The predicted background concentrations across the Air quality Study Area are presented in **Table 7.14**.

Table 7.14: Defra annual mean background concentration for 2038 (µg.m⁻³)

Location	NO _x	NO ₂	PM ₁₀	PM _{2.5}
Air quality Study Area	3.0 – 4.4	3.6 – 5.5	7.1 – 11.8	3.8 – 5.0
National Air Quality Objective (NAQO)	30	40	40	20

- 7.4.6.4 **Table 7.14** shows a decrease in background concentrations in comparison to the existing baseline (see **Table 7.11**). Pollutant concentrations at background and roadside locations are predicted to decrease in future years due to the gradual improvement in vehicle emissions.
- 7.4.6.5 Future baseline pollutant concentrations have been presented to demonstrate that air quality is likely to improve in future years. However, the future baseline pollutant concentrations will not form part of the air quality impact assessment to ensure that a conservative realistic worst case scenario assessment has been undertaken.

7.5 Impact assessment methodology

7.5.1 Overview

- 7.5.1.1 **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information. This section describes the technical methods used to determine the sensitivity of the receptors and magnitude of effects and sets out the significance criteria that have been used for the preliminary air quality assessment. The methodologies for assessing sensitivity, magnitude and significance for air quality are described in more detail below.

7.5.2 Dust emissions

Methodology

- 7.5.2.1 The qualitative assessment of the effects of the construction phase on local air quality in terms of dust generation has been based on the IAQM Construction Dust guidance (IAQM, 2024). Dust is a generic term covering particles of different compositions, shapes and sizes that can have different impacts. PM₁₀ emissions remain suspended in air for long periods and can cause health effects, whereas particles that are larger are not thought to cause health effects to the same extent but can cause dust soiling.
- 7.5.2.2 The assessment approach in the IAQM guidance (IAQM, 2024) involves the following:
- The identification of emission sources and construction activities and the estimation of their potential dust emission magnitude;

- The identification of sensitive receptors for air quality impacts and the assessment of the sensitivity of the area to dust and particulate matter emissions;
- The estimation of the risk of impacts, considering the proximity of emission sources to the receptors and their magnitude;
- The application of appropriate best practice mitigation measures where necessary, proportionate to the identified risk level. The guidance recommends that the assessment of significant effects is only made after application of embedded mitigation.

7.5.2.3 The risk of dust emissions from construction activities, causing an adverse effect on human or ecological receptors, depends on the following:

- Type of construction activities being undertaken and the duration of these activities;
- Type of substrate;
- Size of the construction site;
- Meteorological conditions (such as wind speed, wind direction and rainfall);
- Proximity of the receptors to the construction activities;
- Effectiveness of the dust mitigation measures; and
- Receptors' sensitivity to dust.

7.5.2.4 According to the IAQM guidance the magnitude of dust generated in the construction dust assessment is assigned for four key site activities; demolition, earthworks, construction and track out. The MHPGC Project is not associated with demolition activities and therefore demolition is not considered further. The risk from dust emissions (PM₁₀) is assessed for each activity that is likely to take place considering the location, sensitivity and number of receptors affected. Once the risks are identified following the steps detailed above, the relevant mitigation measures are then defined to avoid, minimize, or offset the impacts.

7.5.2.5 The following sections summarise the key aspects of the IAQM guidance (IAQM, 2024). The detailed methodology, including full definitions of receptor sensitivity and magnitude of impact, are presented within **Volume 3, Annex 7.1: Dust Risk Assessment Methodology, of the PEIR**.

Magnitude of impact

7.5.2.6 The magnitude of impact in the construction dust assessment is assigned for four key activities; demolition, earthworks, construction and track out, based on the intensity of the activity (i.e. site area, volume of construction, etc.) as defined in the IAQM Construction Dust Guidance (IAQM, 2024) – see **Table 2.1 of Volume 3, Annex 7.1: Dust Risk Assessment Methodology, of the PEIR** for further details. The potential for dust emissions (PM₁₀) are assessed for each site activity that is likely to take place and considers three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors;
- The risk of health effects due to an increase in exposure to PM₁₀.

Value and sensitivity

7.5.2.7 The sensitivity of human and ecological receptors to dust emissions is outlined in the IAQM Construction Dust Guidance (IAQM, 2024). In brief, receptors are classified as:

- **High:** residential properties, hospital, schools, international and nationally designated ecological sites with high dust sensitivity;
- **Medium:** office and shop workers, national designated ecological sites with moderate dust sensitivity;
- **Low:** public footpaths, playing fields, parks and shopping streets, local ecological sites.

Significance of effect

7.5.2.8 The IAQM Construction Dust Guidance (IAQM, 2024) “*recommends that significance is only assigned to the effect after considering the construction activity with mitigation*”. The purpose of the construction dust assessment is to determine the levels of risk posed in terms of loss of amenity due to dust soiling and to human health from particulate matter emissions so that an appropriate level of mitigation can be assigned. As the purpose of the mitigation is to prevent a significant effect, the normal finding is that the residual effect is ‘Not Significant’. The IAQM mitigation measures from

the construction dust assessment will be incorporated within the Dust Management Plan (DMP), that will form part of the Code of Construction Practice (CoCP).

7.5.3 Construction traffic

Traffic data screening for human receptors

- 7.5.3.1 The worst-case construction year (in terms of greatest annual average daily traffic (AADT)) is 2033. Traffic data for 2033 have been used in this assessment, with the methodology described in **Volume 3, Chapter 5: Traffic and Transport, of the PEIR**.
- 7.5.3.2 The change in AADT associated with the construction phase of the MHPGC Project has been compared with thresholds set out in the EPUK/IAQM Guidance (EPUK and IAQM, 2017). The thresholds for a significant change in flows are:
- A change of Light Duty Vehicles (LDVs) flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;
 - A change of Heavy-Duty Vehicles (HDVs) flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere.
- 7.5.3.3 The above criteria are used to determine whether an assessment may be required. If traffic from a development exceeds these levels, then it does not necessarily imply that a modelling assessment is required, only that air quality impacts of traffic require more detailed consideration. Professional judgment is used in conjunction with the duration of the traffic increases, magnitude of increase, number of affected receptors and baseline air quality conditions, to determine whether the increase in traffic is likely to result in significant changes in air quality. .

Traffic data screening for ecological sites

- 7.5.3.4 For designated nature conservation sites, the approached detailed in the National Highways LA105 guidance (National Highways, 2024) is used to first identify the 'affected road' network, defined as road links with a change in AADT of more than 1,000 vehicles per day or 200 HDVs. The affected network is then screened to identify whether there are any ecological receptor within 200 m of the road.
- 7.5.3.5 The AADT thresholds do not themselves imply any intrinsic environmental effect and are used to indicate potential need for further investigation.

7.5.4 Assumptions and limitations of the assessment

- 7.5.4.1 To ensure transparency within the EIA process, the following limitations and assumptions have been identified
- Dust Risk Assessment: Professional judgement was used where information was unavailable (see **Table 7.19**).
- 7.5.4.2 Notwithstanding these assumptions and limitations, the methodology adopted for this assessment is considered robust, utilising reasonably available information, and conforms to the requirement of relevant guidance and standard practice.

7.6 Key parameters for assessment

7.6.1 Scope of the assessment

- 7.6.1.1 The approach to assessment was presented in the MHPGC Project Scoping Report and has been refined in consultation with relevant statutory and non-statutory consultees as detailed in **Table 7.15** and through the MHPGC Project Scoping Opinions received.
- 7.6.1.2 Effects that are not considered likely to be of moderate/major significance been scoped out of the assessment and these impacts will not be considered further.
- 7.6.1.3 **Table 7.15** summarises the impacts considered as part of the assessment, while a summary of the effects scoped out of the assessment is presented in **Table 7.16**.

Table 7.15: Impacts scoped into the assessment

Impact	Potential effects scoped into the assessment
Construction phase	
Emissions of dust from construction activities	There are potential impacts on human and ecological sensitive receptors from dust soiling and from increases in PM ₁₀ concentration due to construction activities. These potential impacts are addressed in Section 7.8 .
Emissions of air pollutants from construction traffic	There are potential impacts on human receptors, from construction traffic emissions associated with the MHPGC Project. A screening of construction traffic flows is presented in Section 7.8
Decommissioning phase	
Emissions of air pollutants from decommissioning traffic	Decommissioning traffic flows are unlikely to exceed the construction traffic flows, although the onshore export cables and AC connection cables are likely to be left in situ. The potential impact from decommissioning traffic is therefore assumed to be the same as the potential impact from construction phase traffic, ensuring a conservative approach and a separate assessment is not presented.
Emissions of dust from decommissioning activities	Decommissioning dust emissions are unlikely to exceed the levels assumed during the construction phase, although the onshore export cables and AC connection cables would be left in situ. Therefore, the application of dust mitigation measures for the construction phase (outlined in Table 7.23) should also be applied during the decommissioning phase. Further mitigation will need to be included due to the planned demolition works during decommissioning, as set out in Table 7.26 .

Table 7.16: Impacts scoped out of the assessment

Impact	Justification for scoping out of the assessment
Construction phase	
Emissions of odour from disturbance of historic landfill sites.	The short duration of construction activity at any given location and the avoidance of both historic landfill sites and of sensitive receptors along the route mean that the risk of causing significant odour impacts at human receptors is considered to be very low.
Emissions of air pollutants from construction plant equipment (i.e. Non Road Mobile Machinery (NRMM)) on site.	Emissions to air from NRMM are managed through the implementation of emission standards set in regulations. Therefore, a detailed assessment of NRMM emissions is not included. This has been agreed during scoping with PINS (see Table 7.5).
O&M phase	

Impact	Justification for scoping out of the assessment
Emissions of air pollutants from traffic on roads	O&M of the onshore components of the MHPGC Project may primarily entail remote monitoring, but regular visits and routine inspections will also occur. As maintenance will be undertaken only as required and potential corrective activities will be limited, it is anticipated that the MHPGC Project O&M phase will generate a small number of additional two-way vehicle movements due to infrequent staff trips and occasional maintenance activities. There are no predicted increases in AADT flows associated with O&M of the onshore components and therefore they do not exceed the EPUK and IAQM indicative threshold criteria (see Section 7.8.2) for an air quality assessment. Therefore, the potential impact on human or ecological receptors arising from air emissions generated by vehicle traffic during O&M of the MHPGC Project is not significant and has been scoped out. This has been agreed during scoping with PINS (see Table 7.5).
Emissions of air pollutants from plant equipment on site	Non-road mobile machinery or plant is not expected to be routinely required during the O&M phase, other than on an occasional, as needed basis to support specific repair or maintenance activities. Therefore, an assessment of emissions from construction plant and equipment during the O&M phase is not required.
Emissions of dust from O&M activities	Significant impacts are unlikely during the O&M phase, as there would be no, or very limited dust emissions associated with the O&M of the landfall, onshore export cables, AC connection cables or the Onshore land substation (LSS).
Emissions of odour	There are no expected sources of odour during the O&M phase.
Decommissioning phase	
Emissions of air pollutants from plant equipment on site	As presented in the MHPGC Project Scoping Report, any pollutants and emissions generated during decommissioning are anticipated to be less than the amount generated during construction, as the onshore export cables and AC connection cables are likely to be left in situ. Therefore, an assessment of emissions from plant and equipment during the decommissioning phase is not required.
Emissions of odour from disturbance of historic landfill sites	The short duration of decommissioning activity at any given location and the avoidance of both historical landfill sites and of sensitive receptors along the route mean that the risk of causing significant odour impacts at human receptors is very low.

7.6.2 Maximum design scenario

- 7.6.2.1 The maximum design scenario (MDS) for each impact identified in **Section 7.6.1** has been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The MDS presented in **Table 7.17** have been selected from the parameters provided in **Volume 1, Chapter 2: Project Description, of the PEIR** and methodology outlined in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR**.

Table 7.17: MDS relevant for the assessment of potential impacts on air quality

Impact	Maximum Design Scenario	Explanation
Construction		
<i>Landfall</i>		
Emissions of dust from construction activities	General Working hours: 7am-7pm, Mon-Fri and 7am - 1pm on Saturday, no activity on Sundays or bank holidays with shoulder mobilisation hours, and continuous working required for trenchless techniques. Construction period for Landfall: 3.5 years Landfall (trenchless drill) Landfall trenchless drill installation method: Horizontal Directional Drilling (HDD) or Direct Pipe Maximum burial depth of trenchless drill (per bore): 80m below ground level (bgl) Maximum trenchless drill length: 2km Duration of trenchless drilling activity: 300 days Landfall Infrastructure onshore (landward of MHWS) Maximum width of trenchless drill area, west of Durham Coast Line: 400m Corridor length: 800m Location of trenchless drill entry point (onshore): Within 400m from centre point (E: 443667, N: 546834) except to the east, due to the railway restriction. Number of trenchless drill entry points: 4 bores Material quantities associated with excavation: 130,000m³ Transition Joint Bays (TJBs) Number of TJBs: 2 Location of TJBs: Within 150m of landfall trenchless drill entry point Area of TJB: 150m² Working Area of TJB (construction): 750m² Depth of TJB: 2.5m Landfall construction compound Number of main compounds: 1	The MDS for Air Quality is represented by the largest working areas and entry pits located within the TJB working area which arise from the construction of the landfall. The impact is assessed over the full duration of landfall construction and a period of continuous (24 hour) working for the 10 month duration of trenchless techniques. The assessment has been undertaken for the receptors located within 250m of the MHPGC PEIR Red Line Boundary: Onshore. Construction activities are assumed to be potentially undertaken across the entire area that falls within the MHPGC PEIR Red Line Boundary: Onshore. These parameters represent the largest compound footprints and largest areas of disturbance, working areas and number of trenches which create the greatest dust generation potential from temporary construction activities that may affect relevant receptors. Trenchless drill length The maximum total trajectory distance for the landfall trenchless drill is 2km (from entry pit to exit pit), within the parameters defined for the maximum length of trenchless drill above MHWS (800m), between MHWS and MLWS (60m) and seaward of MLWS (1,660m).

Impact	Maximum Design Scenario	Explanation
	Dimension of main compound: 48,000m ² Number of secondary compounds: 1 Dimension of secondary compound: 900m ² Number of access tracks: 2 from A192 Construction access track widths: 10m Drilling mud: bentonite and/or polymer fluids	<u>Excavated material volumes:</u> Bore trajectory excavation material (full bore lengths) Launch/Entry Pit excavation TJB excavation Compound foundation Access road excavation <u>TJBs:</u> There is the potential for 2 TJBs to be required as a maximum. Note that whilst the maximum number of TJBs is 2, the MDS value provided for this topic is the 'working area for TJB construction' and is defined by the construction area for a single TJB, which joints both HVDC export cables and is the largest working area.
Emissions of air pollutants from construction traffic	AADT flows on affected links are defined in Table 7.24 and Table 7.25	The peak construction year regarding AADT flows, used in the traffic screening within the air quality assessment, is 2033. Both (Green and Blue) LSS Options are considered in the air quality assessment.
<i>Onshore Export Cables and AC Connection Cables</i>		
Emissions of dust from construction activities	Construction period for Onshore Export Cables: 3.5 years Dimensions of trench for grid connection export cables (HVAC) – Blue LSS Number of export cables: 24 Length of cables route: 4,260m Number of cables trenches: 4 Width of cables corridor (temporary including permanent): 100m Onshore cables area (temporary): 426,000m ² Trench width at top per circuit: 4.8m Trench width at base per circuit: 2.8m	<u>Number of export cables</u> 4 = 2-off Conductors and 2-off Fibre Optics cables. The Onshore Export Cables/AC Connection Cables parameters defined in this MDS are those required to construct the MHPGC Project, including the Blue LSS option. The Blue LSS option constitutes the worst-case due to the larger cables corridor width and thus size of working

Impact	Maximum Design Scenario	Explanation
	Trench depth per circuit: 1.8m Depth of stabilised backfill: 450mm Number of cables route joint bays: 32 Number of link boxes: 32 Volume of material excavated per joint bay: 2,264m³ (total = 18,112m³, assuming 4 circuits are jointed in a single excavation) Construction land take for joint bay (surface area): 1,472m² (total = 11,776m²) Volume of material excavated per link box: 12.5m³ Construction land take for link box: 100m² (total = 3200m²) Volume of material excavated (link boxes): 400m³ Dimensions of trench for onshore export cables (HVDC) – Blue LSS Number of export cables: 4 Length of cables route: 4.83km Width of cables corridor (temporary inc. permanent): 40m Number of cables trenches: 2 Onshore cables area (temporary): 293,200m² Trench width at top: 6.85m Trench width at base: 4m Cables trench depth: 1.8m Depth of stabilised backfill: 450mm Trenchless depth (excluding landfall): 30m Number of cables route joint bays: 12 Volume of material excavated per joint bay: 700m³ Construction land take per joint bay (surface area): 600m² Volume of material excavated per monitoring box: 18m³ Volume of material excavated (for monitoring boxes): 216m³ Construction land take per monitoring box: 64m² Construction land take for all monitoring boxes: 768m² Infrastructure Number of haul roads: 1 Haul road construction: geogrids and 500mm stone	area required, when compared to the Green LSS Option. The assessment has been undertaken for the receptors located within 250m of the MHPGC PEIR Red Line Boundary: Onshore. Construction activities are assumed to be potentially undertaken across the entire area that falls within the MHPGC PEIR Red Line Boundary: Onshore. These parameters within the maximum design scenario represent the greatest dust generation potential from temporary construction activities that may affect relevant receptors.

Impact	Maximum Design Scenario	Explanation
	Haul road widths: 8m Haul road depth: 0.5m Dimensions of temporary culvert/bridge crossings for the haul road: 10m x 6m x 5m Number of main compounds: 2 Main compound dimensions: 7ha Total area of main compounds: 14ha Number of secondary construction compounds: 6 Dimensions per secondary construction compound: 10,000m² Total area of secondary construction compounds: 6ha. Trenchless Drill Crossings Major Crossings of A, B and Classified unnumbered roads (known as C roads) (including the A19 and B1432) and Hesledon Moor East SSSI. Trenchless drill methodology: HDD, micro-tunnelling (auger bore or direct pipe) Number of trenchless drill compounds: 6 (3 entry and 3 exit trenchless drill compounds) Dimensions of trenchless drill compounds: 6,000m² Total trenchless drill compound area: 36,000m² Trenchless depth (excluding landfall): 30m Construction Access Number of construction access tracks (excluding existing tracks): 6 Drilling mud used: bentonite and/or polymer fluids Construction Access Number of construction access tracks (excluding existing tracks): 6	
Emissions of air pollutants from construction traffic	AADT flows on affected links are defined in Table 7.24 and Table 7.25	The peak construction year regarding AADT flows, used in the traffic screening within the air quality assessment, is 2033. Both (Green and Blue) LSS Options are considered in the air quality assessment.
<i>Onshore Land Substation</i>		

Impact	Maximum Design Scenario	Explanation
Emissions of dust from construction activities	General Construction period for LSS: 4.5 years Dimensions Area of temporary construction footprint: 7ha Area of temporary works (laydown and storage): 3.5ha Number of buildings: 15 Width of main building/structure: 100m Length of main building/structure: 200m LSS Construction Description of foundations: raft or pile caps (suspended structure) or piled foundations and suspended structures Volume of excavation for foundations: 20,000m³ Cut and fill balance: 50,000m³ Material types and quantities associated to excavation: 14,000m³ topsoil, 65,000m³ other materials Estimated waste quantities: 50,000m³ Access • Temporary width of access including passing bays: 15m • Number of temporary accesses: 2 • Reinstatement of temporary land: 4 months	The assessment has been undertaken for the receptors located within 250m of the MHPGC PEIR Red Line Boundary: Onshore. Construction activities are assumed to be potentially undertaken across the entire area that falls within the MHPGC PEIR Red Line Boundary: Onshore. These parameters within the maximum design scenario represent the greatest dust generation potential from temporary construction activities that may affect relevant receptors.
Emissions of air pollutants from construction traffic	AADT flows on affected links are defined in Table 7.24 and Table 7.25	The peak construction year regarding AADT flows, used in the traffic screening within the air quality assessment, is 2033. Both (Green and Blue) LSS Options are considered in the air quality assessment.
Decommissioning		
<i>Landfall</i>		
Decommissioning of the Landfall cables and associated		Decommissioning is likely to operate within the parameters identified for

Impact	Maximum Design Scenario	Explanation
earthworks resulting in potential impacts on air quality	Leave cables in place, to reduce/ avoid environmental disturbance. Leaving the cables in place has little or no environmental impact whilst recovering them would disturb the local environment.	construction (i.e., any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction). The MDS during decommissioning is the removal of the above-ground infrastructure as this presents the greatest disturbance and potential risk of dust and emissions of air pollutants being released
Onshore Export Cables		
Decommissioning of the onshore cables and associated earthworks resulting in potential impacts on air quality		
Land Substation		
Decommissioning of the LSS and associated earthworks resulting in potential impacts on air quality	Deconstruction in the inverted sequence of installation, after the LSS has been decommissioned. All equipment and materials including foundations will be demolished and disposed of, in accordance with the latest relevant guidance. The site will be reinstated.	

7.7 Commitments adopted as part of the MHPGC Project

- 7.7.1.1 As set out in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** and **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR**, several measures have been adopted as part of the MHPGC Project to reduce the potential for impacts on air quality.
- 7.7.1.2 Embedded mitigation includes the following measures as identified in the Institute of Sustainability and Environmental Professionals (ISEP), formerly Institute of Environmental Management and Assessment (IEMA), Guide to Shaping Quality Development (IEMA, 2015):
- Primary 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 DCO and marine licence, or both;
 - Tertiary 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”.
- 7.7.1.3 Embedded mitigation measures that will form part of the final design (and are established legislative requirements/good practice, or both) have been taken into account as part of the initial assessment presented in **Section 7.8** (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicant is committed to are considered in the assessment of effects.
- 7.7.1.4 Where an assessment identifies likely significant adverse effects, secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by ISEP as “actions that will require further activity to achieve the anticipated outcome” and may be imposed as part of the planning consent, or through inclusion in the Environmental Statement (ES). These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures both pre-mitigation and residual effects are presented.
- 7.7.1.5 The embedded measures relevant to air quality are outlined in **Table 7.18**. As there is a secured commitment to implementing these measures, they are considered inherently part of the design of the MHPGC Project and have therefore been considered in the assessment presented in **Section 7.8**.

Table 7.18: Embedded commitments relevant to air quality implemented as part of the MHPGC Project

Commitment number	Measure adopted	How the measure will be secured
CoT16	An Onshore Decommissioning Plan will be developed prior to decommissioning. It will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure (if and where relevant and practicable), and details relevant to flood risk, pollution prevention, protection of soils and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant legislation and available guidance at the time of production, as far as reasonably practicable.	Dust control measures to be secured via a DMP as an appendix to the Onshore Decommissioning Plan. This will be secured by a requirement in the DCO which will require a DMP to be developed as part of the Onshore Decommissioning Plan to be approved by DCCT.
CoT18	An Outline Code of Construction Practice (CoCP) will be prepared and submitted with the application for development consent. A Detailed CoCP will be developed in accordance with the Outline CoCP. The Outline CoCP will include (but is not limited to) measures to maintain and address: • Flood protection and control measures; • Water environment and drainage; • Noise and vibration management measures; • Air quality and dust management; • Pollution prevention and management; • Geology and ground conditions; • Soil and materials management; • Land use, tourism and recreational assets; • Waste management. limited to) measures to maintain and address.	Dust control measures to be secured via the outline DMP that forms an appendix to the outline CoCP, which will be prepared and submitted for the application for development consent. This will be secured by a requirement in the DCO which will require a detailed DMP to be developed in accordance with the outline approved by DCC.
CoT21	An Outline Dust Management Plan (DMP) will form part of the Outline Code of Construction Practice (CoCP), which will be prepared and submitted as part of the application for development consent. A Detailed DMP will be developed in accordance with the Outline DMP. The measures in the Detailed DMP will accord with guidance set out by the Institute of Air Quality guidance Management (IAQM, 2024) where appropriate and practicable, and will include measures for monitoring and reporting dust levels, and dust suppression and mitigation measures during construction.	Dust control measures to be secured via the DMP that forms an appendix to the outline CoCP, which will be prepared and submitted for the application for development consent. This will be secured by a requirement in the DCO which will require a detailed DMP to be developed in accordance with the outline approved by DCC.

7.8 Assessment of impacts

7.8.1 Overview

7.8.1.1 This section includes the assessment of the impacts to air quality arising from the MHPGC Project. A summary of the effects is presented in **Table 7.30**.

7.8.2 Construction Phase

Dust emissions

7.8.2.1 Construction activities that have the potential to generate and/or re-suspend dust and PM₁₀ from the construction of the onshore elements of the MHPGC Project include:

- Site clearance and preparation;
- Earthworks;
- Materials handling, storage, stockpiling, spillage and disposal;
- Movement of vehicles and construction traffic within the site;
- Use of crushing and screening equipment/plant;
- Exhaust emissions from site plant, especially when used at the extremes of their capacity and during mechanical breakdown; and
- Construction of roads and areas of hardstanding alongside fabrication processes.

7.8.2.2 The majority of the releases are likely to occur during the 'working week'; the core working hours are Monday through Friday 07:00 to 19:00, and Saturday 07:00 to 13:00. However, for some potential release sources (e.g. exposed soil produced from significant earthwork activities) in the absence of dust control mitigation measures, dust generation has the potential to occur 24 hours per day over the period during which such activities are to take place.

7.8.2.3 The IAQM guidance states that, provided the dust control mitigation measures are successfully implemented, the resultant effects of the dust exposure will normally be 'not significant'. For those cases where the risk category is negligible, no dust control measures are considered necessary.

Dust emission magnitude

7.8.2.4 The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four different dust and PM₁₀ sources: earthworks; construction; and trackout. The MHPGC Project is not associated with demolition activities. The findings of the assessment are presented in **Table 7.19**. The dust magnitude was assigned based on the evaluation criteria within the IAQM guidance (IAQM, 2024), shown in **Volume 3, Annex 7.1: Dust Risk Assessment Methodology, of the PEIR**.

Table 7.19: Dust emission magnitude

Activity	Dust emission magnitude
Earthworks	The total area of the MHPGC PEIR Red Line Boundary: Onshore site falls within the IAQM range for large sites (>110,000m ²). It has been assumed that >10 heavy earth moving vehicles will be active at any one time. Overall, the potential dust emission magnitude is considered to be Large for earthwork activities.
Construction	It is understood that the total area to be constructed within the MHPGC Project PEIR Onshore is > 75,000m ³ . Potentially dusty construction materials (concrete and aggregates) have been identified for construction. Overall, the potential dust emission magnitude is considered to be Large for construction activities.
Trackout	The MDS for traffic movements is presented in Table 7.17 . At this stage, the vehicle movements generated by construction activities and their associated routes are indicative. To provide a conservative assessment and based on the size and nature of the MHPGC Project it is assumed that there will be >50 outward HDV movements per day. The potential dust emission magnitude is considered to be Large for trackout.

Sensitivity of the area

- 7.8.2.5 The prevailing wind direction at the Air Quality Study Area is from the southwest. Therefore, receptors located to northeast of the MHPGC PEIR Red Line Boundary: Onshore are more likely to be affected by dust and particulate matter emitted and re-suspended during the construction phase. Under low wind speed conditions, it is likely that the majority of dust would be deposited in the area adjacent to the source.
- 7.8.2.6 There are between 10-100 high sensitivity receptors (residential properties) within 20m of the MHPGC PEIR Red Line Boundary: Onshore. According to the IAQM guidance (IAQM, 2024) (described in detail in **Volume 3, Annex 7.1: Dust Risk Assessment Methodology, of the PEIR**) the sensitivity of the area to dust soiling is high from earthworks, construction and trackout activities.
- 7.8.2.7 There is one high sensitivity ecological site (Durham Coast SAC) located within the MHPGC PEIR Red Line Boundary: Onshore. Other medium and low ecological sensitive receptors are located within MHPGC PEIR Red Line Boundary: Onshore and are listed in **Table 7.20**. According to the IAQM guidance (IAQM, 2024) the sensitivity of the area to ecological impacts is classified as high from earthworks, construction and trackout activities.

Table 7.20: Dust Sensitive of Designated sites

Designated site	Relevant Qualifying features	Dust Sensitivity
Durham Coast SAC	Vegetated sea cliffs of Atlantic and Baltic Coasts comprising complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.	High
Hawthorn Dene SSSI	- Semi-natural broadleaved woodland on magnesian limestone; - Magnesian limestone grassland; - Tall fen.	Medium
Hesledon Moor West SSSI	- Unimproved neutral pasture; - Base-rich mire.	Medium
Hesledon Moor East SSSI	Fen, carr and heathland communities on acidic glacial drift overlying magnesian limestone.	Medium
Durham Coast SSSI	- Paramaritime magnesian limestone vegetation. - Species-rich dune system.	Medium
Noses Point Local Nature Reserve (LNR)	Magnesian limestone bedrock has given rise to a rare form of grassland with unique populations of plants and animals.	Low
Hawthorn Dene Ancient Woodland (AW)	Semi-natural broadleaved woodland on magnesian limestone.	Low
Coop House Wood Local Wildlife Site (LWS)	Damp woodland.	Low
Hesledon Moor West LWS	- Acid pasture. - Alder and willow carr with tall herb and marsh communities.	Low
Hawthorn Quarry LWS	Quarry with plants typical of magnesian limestone.	Low
Cold Hesledon Meadow LWS	Damp meadow.	Low

Designated site	Relevant Qualifying features	Dust Sensitivity
	Magnesian limestone grassland on limestone cliff.	
Hesledon Moor East LWS	Semi-improved grassland with fringing scrub next to stream and marsh vegetation.	Low

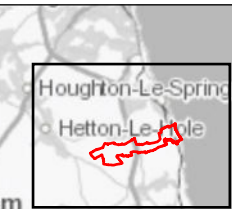
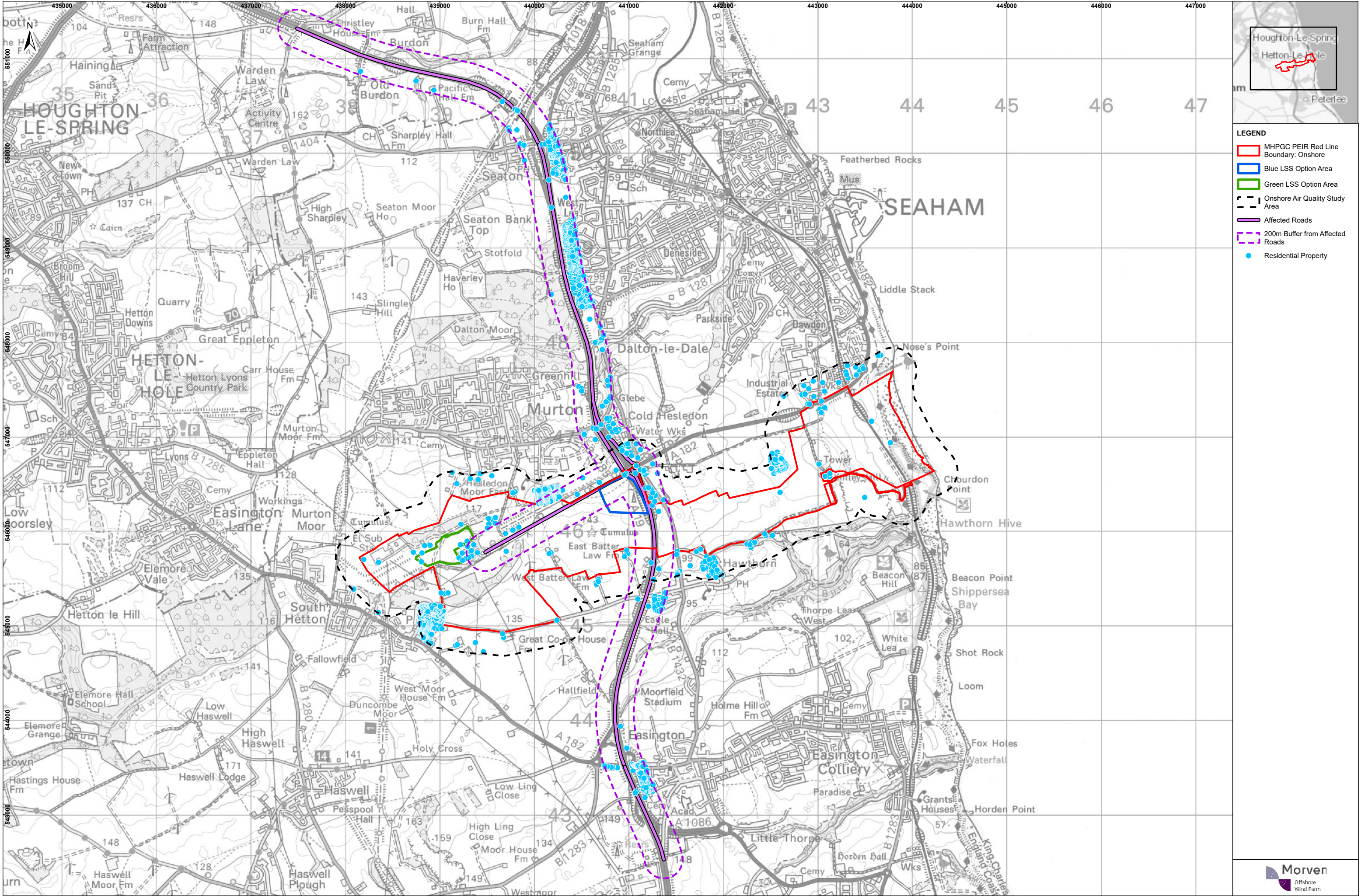
7.8.2.8 The Defra background map data indicates that annual mean PM₁₀ concentrations are below 24µg/m³ (**Table 7.11**) in the vicinity of the MHPGC PEIR Red Line Boundary: Onshore. As there are between 10-100 sensitive receptors within 20m of the MHPGC PEIR Red Line Boundary: Onshore, based on the criteria set out in IAQM Guidance (IAQM, 2024), the area is classified as Low sensitivity to human health impacts from earthworks, construction and trackout activities.

7.8.2.9 Taking the above into account and following the IAQM assessment methodology, the sensitivity of the area to changes in dust and PM₁₀ has been derived for each of the construction activities considered. The results are shown in **Table 7.21**.

7.8.2.10 All onshore earthworks and construction activities will occur within the MHPGC PEIR Red Line Boundary: Onshore. Dust sensitive receptors located within 20m, 50m, 100m and 250m of the MHPGC PEIR Red Line Boundary: Onshore, and within 20m and 50m from the egress points for up to 250m (to consider trackout) have been considered and are shown in **Figure 7.2** and **Figure 7.3**.

Table 7.21: Sensitivity of the Study Area

Potential impact	Sensitivity of the Surrounding Area		
	Earthworks	Construction	Trackout
Dust Soiling	High	High	High
Human Health	Low	Low	Low
Ecology	High	High	High



LEGEND

- MHPGC PEIR Red Line Boundary: Onshore
- Blue LSS Option Area
- Green LSS Option Area
- Onshore Air Quality Study Area
- Affected Roads
- 200m Buffer from Affected Roads
- Residential Property



Project Name:
MORVEN HAWTHORN PIT GRID
CONNECTION PROJECT

Drawing Title:
FIGURE 7.3 HUMAN HEALTH RECEPTORS LOCATED WITHIN THE ONSHORE AIR
QUALITY STUDY AREA

0 0.45 0.9 km
Scale@A3: 1:35,000

Geodetic Information:
Datum: OSGB 1936
Projection: British National Grid

Data Sources:
BP, Ordnance Survey

Service Layer Credits:
OS Open Greyscale: Contains OS data © Crown Copyright and database right 2019.
Contains public sector information licensed under the Open Government License v3.0.
© Environment Agency Copyright 2026.
© Crown copyright and database rights 2026 Ordnance Survey AC0000848283

Drawing Number:
MHPGC-WSP-PEIR-061

VER	DATE	DETAILS	BY	CHECK
01	9/28/2026	Initial Issue	LH	LT
-	-	-	-	-

Overall dust risk

- 7.8.2.11 The dust emission magnitude determined in **Table 7.19** has been combined with the sensitivity assessment in **Table 7.21** to define the risk of impacts for each construction activity of the MHPGC Project in the absence of mitigation, as shown in **Table 7.22**.

Table 7.22: Dust impact risk

Sensitivity of Air quality Study Area	Dust emission magnitude		
	Earthworks (Large)	Construction (Large)	Trackout (Large)
Dust soiling (High)	High risk	High risk	High risk
Human Health (Low)	Low risk	Low risk	Low risk
Ecological (High)	High risk	High risk	High risk

- 7.8.2.12 Based on the dust emission magnitudes and the receptor sensitivities in the Air quality Study Area, and in the absence of the dust controls measures to be included as part of the CoCP (see **Table 7.23**), the dust impact risk for earthworks, construction and trackout is categorised as **high**.
- 7.8.2.13 Overall, there is a high risk of dust impacts associated with the construction phase of the MHPGC Project. IAQM Guidance recommends that no assessment of the significance of construction activity effects is made without mitigation in place. In accordance with the IAQM guidance (IAQM, 2024), mitigation measures associated with the highest level of risk should be applied, i.e. for a high-risk site.
- 7.8.2.14 The control of dust and amenity effects from a construction site relies upon good site management and mitigation techniques to reduce emissions of dust and limit dispersion. A summary of the mitigation measures recommended in the IAQM Guidance to reduce impacts from high-risk sites is provided **Table 7.23**. These embedded mitigation measures would be implemented during the construction phase of the MHPGC Project, through the CoCP (CoT18) and DMP (CoT21), which are secured commitments (see **Table 7.18**).

Table 7.23: Desirable and highly recommended dust mitigation measures for high-risk sites

Activity	Mitigation measure
Communications	- Develop and implement a 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 site boundary.
Site management	- Record all complaints and incidents in a site log; - Make the complaints log available to DCC if requested; - Record any exceptional dust incidents on- or off-site; - Take appropriate measures to reduce emissions in a timely manner, and record the measures taken within the log.
Monitoring	- Undertake periodic on-site inspections and carry out regular site inspections to monitor compliance with the detailed DMP; - Carry out regular inspections to ensure compliance with the DMP and record results in the site logbook; - Increase the frequency of inspections during activities with a high potential to create dust or in prolonged dry weather; - Dust flux, or real-time PM₁₀ continuous monitoring for the baseline (minimum of three months before onsite work commences), and construction phase (for the duration of earthworks activity which occurs within 250m of sensitive receptors). Requirements will vary by earthwork phase and location of works (dependant on proximity to sensitive off-site receptors) and will be detailed in the DCO compliance documents.

Activity	Mitigation measure
Preparing and maintaining site	- Plan site layout to locate dust generating activities as far as possible from receptors, where practicable; - Remove materials that have a potential to produce dust from site as soon as practicable, unless being re-used on site. If they are being re-used on site cover as described below. - Remove dust generating materials from site as soon as possible; - If necessary and practicable, stockpiles may be covered, seeded or fenced to prevent wind whipping during dry periods.
Operating vehicle/machinery and sustainable travel	- If practicable, ensure all vehicles switch off engines when stationary. Impose and signpost a maximum-speed-limit of 15 miles per hour (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. - Implement a travel plan that supports and encourages sustainable travel
Operations	- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction - Provision of an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where practicable and appropriate. - Use of covered skips where appropriate and practicable. - Reduce drop heights from loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. - Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods
Waste management	No bonfires on site.
Measures specific to earthworks	Where appropriate, re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable
Measures specific to construction	- Avoid scabbing if possible; - Where practicable, ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust
Measures specific to trackout	- Where appropriate, use water-assisted dust sweeper(s) on the access and local residential roads, to remove, as necessary, any material tracked out of the site. - Avoid dry sweeping of large areas. - Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport - Haul routes to be regularly dampened down with fixed or mobile sprinkler systems or mobile water bowsers and regularly cleaned - Implement a wheel washing system at the onshore substations (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). - Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever practicable and the site size and layout permits.

- 7.8.2.15 With effective implementation of dust control measures recommended for high risk sites (see **Table 7.23**), secured through the CoCP and DMP (see **Table 7.18**), the dust impact risk for construction, earthworks and trackout associated with the construction phase of the MHPGC Project is categorised as **negligible**, and therefore not significant in EIA terms. The likely significant effects of construction dust are predicted to be of local spatial extent, intermittent in frequency and mostly reversible.

Construction traffic

- 7.8.2.16 **Volume 1, Chapter 2: Project Description, of the PEIR** defines the construction activities required for the MHPGC Project. At the PEIR Stage, optionality is retained, with the two options for the LSS location (the Green LSS Option Area and Blue LSS Option Area). These two scenarios (the Green LSS Option Area Scenario and Blue LSS Option Area Scenario) have been considered with the other onshore components in this assessment. A screening assessment of traffic flows associated with the construction of the MHPGC Project was undertaken using the IAQM (IAQM, 2017) criteria for human receptors and the LA105 (National Highways, 2024) for ecological sites, as detailed in **Section 7.5.3**.
- 7.8.2.17 Construction traffic flows reported in **Volume 3, Chapter 5: Traffic and Transport, of the PEIR** represent peak quarterly flows and are therefore not directly comparable with the AADT flows represented in **Table 7.24** and **Table 7.25**. The AADT traffic flows used in this assessment have been derived from annual traffic volumes averages divided by the number of working days and distributed across the traffic network. Traffic data has been provided for 2033, as this is the year with the highest AADT traffic flows/construction activity.

Human Health

- 7.8.2.18 Road links experiencing increases in AADT construction flows that exceed the IAQM and EPUK (IAQM, 2017) screening criteria for human health are presented in **Table 7.24** for the Green LSS Option Area Scenario and **Table 7.25** for the Blue LSS Option Area Scenario. The tables present the traffic flows associated with the construction of the MHPGC Project, including either the Green (**Table 7.24**) or the Blue (**Table 7.25**) LSS Scenario.

Table 7.24: Construction traffic two-way AADT flows for the MHPGC Project, including the Green LSS Option Area Scenario

Link ID	Link description	Peak construction year 2033	
		Total LDV flows	Total HDV flows
L1	A19: from Burdon Lane to Seaton Lane	240	201
L2	A19: from Seaton Lane to B1285	308	201
L4	A19: from A182 to Hall Walks	231	201
L5	A19: from Hall Walks to the south	231	201
L20	Access Road: from A182 to Jade Business Park	469	231
IAQM AADT Screening Criteria		500	100
LA105 AADT Screening Criteria		1000	200
Exceedances of relevant EPUK and IAQM AADT Screening Criteria for human health are in bold.			

Table 7.25: Construction traffic two-way AADT flows for the MHPGC Project, including the Blue LSS Option Area Scenario

Link ID	Link description	Peak construction year 2033	
		Total LDV flows	Total HDV flows
L1	A19: from Burdon Lane to Seaton Lane	226	192

Link ID	Link description	Peak construction year 2033	
		Total LDV flows	Total HDV flows
L2	A19: from Seaton Lane to B1285	291	192
L4	A19: from A182 to Hall Walks	218	192
L5	A19: from Hall Walks to the south	218	192
L20	Access Road: from A182 to Jade Business Park	355	211
IAQM AADT Screening Criteria		500	100
LA105 AADT Screening Criteria		1000	200
Exceedances of relevant EPUK and IAQM AADT Screening Criteria for human health are in bold.			

7.8.2.19 Traffic data in **Table 7.24** and **Table 7.25** indicates that IAQM screening criteria for AADT HDV flows are exceeded for both the Green and Blue LSS Option Area Scenarios, however LDV flows are below the screening criteria. The Green LSS Option Area scenario generates slightly more HDV movements than the Blue LSS Option Area Scenario, where the highest number of AADT HGV flows (231) on the Access Road between the A182 to Jade Business Park (L20).

7.8.2.20 The nearest human health receptors (residential properties) to link L20 (the Access Road between the A182 to Jade Business Park) are located approximately 100m from the affected road link. Pollutant concentrations from road traffic emissions decline rapidly due to dispersion with distance from the source, with the most significant decline occurring within the first 20–30m of the kerb. Beyond this distance, incremental contributions from road traffic emissions become very small and are unlikely to be significant (Laxen and Marner, 2008). There are no sensitive receptors within 200m of the other affected road links that exceed the IAQM and EPUK screening criteria (see **Figure 7.3**). Furthermore, background air quality concentrations during the 2033 peak construction year are well below the relevant AQAL based on 2026 Defra background concentrations (**Table 7.11**).

Significance of effect

7.8.2.21 As a result of the above, the forecasted increases in AADT HGV flows for the MHPGC Project, including either the Green or Blue LSS Option Area Scenarios are unlikely to increase pollutant concentrations significantly within the Air Quality Study Area, or result in significant air quality effects at sensitive human receptors. Long and short term NO₂, PM₁₀ and PM_{2.5} concentrations are likely to remain below the long- and short-term AQALs throughout the construction period.

7.8.2.22 Construction-related traffic impacts are temporary in nature and will not give rise to long term changes in pollutant concentrations. Vehicle emissions associated with the construction phase of the MHPGC Project are anticipated to result in negligible impacts on air quality at sensitive human receptors and are therefore **not significant** in EIA terms.

Ecological sites

7.8.2.23 Traffic data presented in **Table 7.24** and **Table 7.25** indicates that the LA105 (National Highways, 2024) screening criteria for AADT HDV flows are exceeded for both the Green and Blue LSS Option Area Scenarios, however LDV flows are below the screening criteria. For the Green LSS Option Area road links L1, L2, L4 and L5, there are marginal exceedances (i.e. by 1 AADT). Dawdon Dene LWS and Sharpley Ancient Woodland are located within 200m of L2 and L1 respectively. Cold Hesledon Meadows LWS is located within 200m of L5. As the AADT HDV criteria are only marginally exceeded and current NO_x concentrations are comfortably below the annual mean AQAL. It is reasonable to screen out Cold Hesledon Meadows LWS, Dawdon Dene LWS and Sharpley Ancient Woodland from further assessment.

7.8.2.24 Road link L20 (Access Road between the A182 to Jade Business Park) exceeds the LA105 screening criteria for both options. The Access Road between the A182 to Jade Business Park (L20) is within 200m of Hesledon Moor East SSSI (approximately 110m to the north) and Coop House Wood LWS (approximately 75m to the south) (see **Figure 7.2**). Exceedances of the screening criteria are used to inform the potential need for further assessment and do not represent a measure of likely

significant effects. Current background ambient air pollution concentrations and deposition levels at the ecological receptors (presented in **Table 7.13**), illustrate that existing NO_x concentrations are comfortably below the annual mean AQAL. Background nitrogen deposition exceeds the minimal critical load whereas acid deposition is below the relevant critical load.

Significance of effect

- 7.8.2.25 As stated in **Table 7.17**, the MDS assessed represents the highest number of construction vehicle movements during the construction phase that is expected to last for 33 months, providing a worst case scenario for construction vehicle emissions, with construction vehicle movements unlikely to exceed the LA105 criteria through the entire construction period. Given the current air quality at the ecological receptors, the conservative nature of the current assessment and the fact the additional traffic flows are unlikely to result in any further exceedances of the AQALs, potential impacts on ecological receptors are considered temporary, short-term, direct, adverse, reversable and negligible and therefore **not significant** in EIA terms .

7.8.3 Decommissioning phase

Dust emissions

Dust emission magnitude

- 7.8.3.1 During the decommissioning phase, the following dust generating activities are likely to occur: earthworks, demolition and trackout. Construction activities are not anticipated. The dust emission magnitude associated with decommissioning activities are not likely to be greater than those in the construction phase and may be lower as detailed below.
- 7.8.3.2 The dust emission magnitude for earthworks is likely to be lower during decommissioning than that during the construction phase (large). This is because all below-ground infrastructure is expected to remain in situ to reduce environmental disturbance, and reopening of cables trenches is not anticipated. This reduces excavation works, handling of excavated material and the creation of temporary soil stockpiles, all of which would otherwise increase the potential magnitude of dust emissions.
- 7.8.3.3 While the construction phase does not involve demolition, such activities are expected to take place during the decommissioning phase. Based on the extent of above ground infrastructure to be removed, based on the original construction volumes, it is likely that the dust emission magnitude for demolition activities would be large.
- 7.8.3.4 The dust emission magnitude for trackout is likely to remain large although there will be a reduction in vehicle movements during the decommissioning phase in comparison to the construction phase.

Receptor sensitivity

- 7.8.3.5 The receptor sensitivity determined for the construction phase (**Table 7.21**) has been used as a proxy for the decommissioning phase. Therefore, the overall dust risk impacts for demolition will be high and high mitigation measures serve as a worst-case scenario.

Significance of effect

- 7.8.3.6 The potential dust impacts during decommissioning of the MHPGC Project will be, as a worst case, on par with impacts during the construction phase.
- 7.8.3.7 In addition, mitigation measures for the demolition activities have been included for the decommissioning phase and are provided in **Table 7.26**. As established within the construction phase assessment and in accordance with the IAQM guidance (IAQM, 2024), effects from dust will be **not significant** with the implementation of embedded mitigation measures for High Risk sites.
- 7.8.3.8 These embedded mitigation measures would be implemented during the decommissioning phase of the MHPGC Project, through the Onshore Decommissioning Plan (CoT16), which is a secured commitment (see **Table 7.18**).

Table 7.26: Desirable and highly recommended dust mitigation measures for demolition in high-risk sites

Activity	Mitigation measure
Measures specific to demolition	• Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust); • Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground; • Avoid explosive blasting, using appropriate manual or mechanical alternatives; • Bag and remove any biological debris or damp down such material before demolition.

- 7.8.3.9 With effective implementation of dust control measures recommended for high risk sites (see **Table 7.23** and **Table 7.26**), secured through the Onshore Decommissioning Plan (see **Table 7.18**), the dust impact risk for demolition, earthworks and trackout associated with the decommissioning phase of the MHPGC Project is categorised as **negligible**, and therefore not significant in EIA terms. The likely significant effects of decommissioning dust are predicted to be of local spatial extent, intermittent in frequency and mostly reversible.

Decommissioning traffic

- 7.8.3.10 Decommissioning traffic flows are not available at the PEIR stage; however, they are expected to be lower than construction traffic flows, as the onshore export cables and AC connection cables would remain in situ. Impacts from vehicle exhaust emissions associated with decommissioning are therefore anticipated to be lower than those identified for the construction phase in **Section 7.8.2** (no significant effects on either human or ecological receptors are anticipated).

7.9 Cumulative Effects Assessment methodology

7.9.1 Methodology

- 7.9.1.1 The Morven Programme comprises four distinct projects: Morven North, Morven South, Morven Hawthorn Pit Grid Connection Project (MHPGC Project), and Morven Branxton Area Grid Connection Project (MBAGC Project). As the largest Zone of Influence (ZOI - the ZOI is limited to sensitive receptors within 200m from road links considered an 'affected road' (see **Figure 7.2**) during the 4.5 year construction period) for the onshore CEA does not overlap with Morven North, Morven South or MBAGC, the onshore Cumulative Effects Assessment (CEA) has been undertaken to assess the MHPGC Project alone with relevant projects, plans and activities using a tiered approach. The CEA has been undertaken in accordance with the methodology described in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment**.
- 7.9.1.2 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, Annex 4.4: Cumulative Screening and Location Plan**). Each project or plan 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.
- 7.9.1.3 In undertaking the CEA for MHPGC Project, it should be noted that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside MHPGC Project. Therefore, a tiered approach has been adopted, whereby all third-party projects and plans considered have been allocated into 'tiers' reflecting their current stage within the planning and development process. This provides a framework for placing relative weight upon the potential for each project/plan included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the project/plan's parameters. The tiered approach utilised within the MHPGC Project CEA employs the following tiers:

- Tier 1 assessment – Existing developments either built (operational) or under construction¹; approved developments awaiting implementation; and permitted/submitted application(s), but not yet determined, plus Morven North and Morven South.
- Tier 2 assessment – All plans/projects assessed under Tier 1, plus plans/projects where a scoping report has been submitted and is in the public domain.
- Tier 3 assessment – All plans/projects assessed under Tier 1 and 2, plus MBAGC Project, and plans/projects that are reasonably foreseeable (e.g. projects identified in development plans, projects in other plans and programmes, offshore renewable energy projects that have a Crown Estate Scotland Lease Option Agreement).

7.9.1.4 The specific projects and plans screened into the CEA for air quality are outlined in **Table 7.27**.

7.9.1.5 The potential impacts that have been considered in the CEA represent a subset of those assessed for MHPGC Project alone. While all impacts scoped into the project-level assessment were considered for inclusion in the CEA, a number were screened out at the CEA stage on the basis that they are localised, temporary, and/or event-based in nature, or have been assessed as negligible. These impacts are not considered capable of interacting cumulatively with similar changes arising from other plans or projects in a manner that could give rise to a cumulative impact and have therefore been scoped out of the cumulative assessment.

7.9.1.6 These impacts include:

- Emissions of air pollutants from decommissioning traffic; and
- Emissions of dust from decommissioning activities.

7.9.1.7 Similarly, some of the potential impacts considered within the MHPGC Project alone assessment are specific to a particular phase of development (e.g. construction, O&M or decommissioning). Where cumulative effects with other plans or projects only have potential to occur where there is spatial or temporal overlap with MHPGC Project during certain phases of development, impacts associated with a certain phase may be omitted from further consideration where no plans or projects have been identified that have the potential for cumulative effects during this period.

7.9.1.8 Only those developments in the short list that fall within the air quality ZOI have the potential to result in cumulative effects with the Proposed Development. The air quality ZOI is shown in **Figure 7.2**. All developments falling outside the air quality ZOI are excluded from this assessment.

7.9.1.9 Other developments have the potential for generating cumulative effects in several ways:

- Generation of additional road traffic during construction. The ZOI of influence is limited to sensitive receptors within 200m from road links considered an 'affected road' (see **Figure 7.2**) during the 4.5 year construction period. Cumulative projects that have the potential to add traffic within the identified 'affected road' have been considered.
- Generation of dust and emissions to air (i.e. from plant equipment) during construction. The ZOI for this is 250m.

¹ Note that existing developments are included in Tier 1 CEA long list but are generally screened out of the CEA assessments, aside from the following exceptions:

1) Existing developments which were not present at the time of baseline characterisation, where a potential cumulative impact-receptor pathway has been identified.

2) Existing developments are screened into tier 1 assessments for specific topics where there is a large conceptual, temporal and spatial overlap between project impacts. In these instances, the potential for ongoing effects through cumulative impact-receptor pathways throughout project lifetime, across the development phases, means that they are considered within quantitative assessment for these topic CEAs (e.g., offshore ornithology assessments consider the cumulative effects of operational offshore wind farms).

Table 7.27: List of other projects and plans considered within the Cumulative Effects Assessment for Air Quality

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicables)	Overlap with MHPGC Project
Tier 1					
DCC4 – EGL1 Visitor Centre	In Planning - Application submitted	0	Full planning application for a temporary visitor centre at the EGL1 site compound for a period of up to 5 years	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.
DCC5 – Croup Hill Solar Farm	Consented	0	Commencement of Development for the creation of a solar farm	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.
DCC7 - Phase 2 Jade Business Park	Consented	0	Application for reserved matters comprising the construction of 3 industrial units with associated access, parking, landscaping and drainage (Phase 2) pursuant to outline planning permission DM/21/002901/OUT (B2/B8 industrial development).	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicables)	Overlap with MHPGC Project
DCC9 – Temporary installation of a batter energy storage system (Caravan Storage, The Woodlands)	In Planning - Application submitted	0	Temporary installation of a battery energy storage system, along with ancillary infrastructure, acoustic and security fencing, access, landscaping provision and ecological enhancements.	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.
DCC10 – Battery Energy Storage System (Land East of Carrs Farm)	In Planning - Application submitted	0	The construction and installation of a Battery Energy Storage System, associated infrastructure, landscaping, fencing, access tracks, biodiversity net gain and underground cables corridor.	12 month construction program	Project is within the applicable ZOI for construction dust and construction traffic.
DCC12- 81 homes and a Convenience Store	In Planning - Application submitted	0	Erection of 81 no. homes, a convenience store (use class E) and associated infrastructure and landscaping	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.
DCC13 - 149 homes, Land East of Seaham Garden Village	In Planning - Application submitted	0	Demolition of existing farm buildings and dwellings and erection of 149 dwellings (use class C3) with vehicle access, open space, landscaping, SUDS, and associated infrastructure works	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicables)	Overlap with MHPGC Project
Tier 3					
DCC14 - Land North West Of Hallfield Farm Solar Farm	Pre-application	0	Screening Opinion request for the construction, operation and decommissioning of a Battery Energy Storage System (BESS) with a storage capacity of up to 300 megawatts (MW).	Detail not available	Project is within the applicable ZOI for construction dust and construction traffic.

7.9.2 Maximum Design Scenario – Cumulative Effects Assessment

- 7.9.2.1 The MDSs identified have been selected as those having the potential to result in the greatest likely significant effect on an identified receptor or receptor group in relation to the CEA. The MDSs have been based on the MHPGC Project alone assessment MDS (**Table 7.17**), as well as publicly available information on other third-party projects and plans that have been screened into the CEA (Table 7.27).

7.10 Cumulative Effects Assessment

7.10.1 Overview

- 7.10.1.1 A description of the significance of cumulative effects upon air quality receptors arising from each identified impact is given below. The CEA for MHPGC Project is presented in **Table 7.28** to **Table 7.29**.

7.10.2 Construction Dust

- 7.10.2.1 There is potential for cumulative construction dust due to activities associated with both the MHPGC Project and any cumulative projects that could be potentially constructed within the 4.5 year MHPGC Project construction period. If the construction period for the MHPGC Project and cumulative projects overlap, then there is the potential for human and ecological receptors within the ZOI to be affected by cumulative dust generated during construction.
- 7.10.2.2 It should be noted that the control of emissions from plant equipment will be managed through the NRMM regulations for both the MHPGC Project and cumulative projects, and therefore not considered further in this assessment. For the MHPGC Project, scoping out emissions from construction plant equipment (i.e. NRMM) has been agreed with consultees (see Table 7.5). There are no cumulative dust impacts anticipated during operation and decommissioning phases. The assessment of emissions to air from the O&M phase of the MHPGC Project has been scoped out. In-combination impacts during decommissioning are unlikely given the nature of the projects and the expected decommissioning period.
- 7.10.2.3 The summary of the Cumulative Effects Assessment is presented in **Table 7.28**.

Table 7.28: MHPGC Project CEA for Construction Dust

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	<u>Tier 1</u> Tier 1 cumulative projects overlap with the MHPGC Project PEIR Onshore Red Line Boundary or are within the ZOI. At the time of writing, timescales for the construction phases of the Tier 1 projects are currently unknown. To ensure a conservative assessment, it has been assumed that Tier 1 project construction timescales overlap with the MHPGC Project construction period of 2033 to 2037. Tier 1 projects DCC4, DCC5, DCC7, DCC9, DCC10 and DCC14 are commercial or industrial in nature and the DCC12 and DCC13 proposals are residential developments. Cumulative impacts from construction dust are expected to have a local spatial extent, medium to short-term duration, be temporary and reversible. This chapter has assessed impacts from construction dust emissions from the MHPGC Project at the Tier 1 projects and has considered potential impacts on sensitive human and ecological receptors within the ZOI. The IAQM guidance (IAQM, 2024), that has been used to assess construction dust, considers the magnitude of impact in the absence of mitigation to identify suitable mitigation measures that form part of embedded mitigation. The magnitude of impact from the MHPGC Project, considering the IAQM proposed mitigation, is negligible. The magnitude of impact from Tier 1 projects are expected to be the same or similar to the impact from construction of the MHPGC Project, assuming mitigation is in place. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> The Tier 3 projects are not considered to raise the category of magnitude of impact beyond what is assessed for Tier 1, summarised as negligible.
Sensitivity of receptor	There are over 100 high sensitivity receptors (residential properties) within 250m of the MHPGC PEIR Red Line Boundary: Onshore which, likely to be affected by cumulative dust emissions (see Figure 7.2). There is one high sensitivity ecological site (Durham Coast SAC) located within the MHPGC PEIR Red Line Boundary: Onshore. Other medium and low ecological sensitive receptors are located within MHPGC PEIR Red Line Boundary: Onshore.
Significance of effect	As detailed previously, providing that the cumulative developments use the recommended IAQM dust controls, the effect will be not significant in EIA terms.

	Cumulative Effects Assessment
Further mitigation and residual significance	No mitigation measures for air quality receptors is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in (Table 7.18) , is not significant in EIA terms.

7.10.3 Construction traffic

- 7.10.3.1 There is potential for cumulative construction traffic, associated with the MHPGC Project and any cumulative projects, that could be potentially constructed within the 4.5 year of the MHPGC Project construction period. If the construction period for the MHPGC Project and cumulative projects overlaps, then there is the potential for human and ecological receptors within the ZOI to be affected by emissions to air from cumulative traffic generated during construction.
- 7.10.3.2 There are no cumulative traffic impacts anticipated during operation and decommissioning phases. The assessment of emissions to air from the O&M phase of the MHPGC Project has been scoped out. In-combination impacts during decommissioning are unlikely given the nature of the projects and the expected decommissioning period.
- 7.10.3.3 The summary of the Cumulative Effects Assessment of construction traffic is presented in **Table 7.29**.

Table 7.29: MHPGC Project CEA for Construction Traffic

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	<u>Tier 1</u> Cumulative impacts from construction traffic are expected to have a local spatial extent, medium to short-term duration, be temporary and reversible. This chapter has screened construction traffic flows from the MHPGC Project against indicative criteria to ascertain if a detailed assessment is required. The screening concluded that although there were five road links that exceeded the indicative criteria (see Figure 7.1), given the level of additional traffic, duration of activities resulting in traffic flows exceeding the criteria (i.e. years 2033 and 2034) and existing air quality baseline, construction-related traffic impacts are unlikely to give rise to long term changes in pollutant concentrations. Project DCC4 covers the construction of a temporary visitor centre at the Eastern Green Link 1 (EGL1) Site compound for a period of up to 5 years, and is therefore unlikely to generate significant traffic flows during the construction phase due to the scale of the proposal and its temporary nature. Project DCC5 and DCC14 are proposed solar farms and similarly are not expected to result in significant traffic flows during the construction phase due to the nature of the proposals. Project DCC7 covers Phase 2 of the Jade Business Park and the construction of three industrial units. According to the air quality assessment for the outline planning application for both Phase 1 and 2 of the Jade development, the overall construction period is likely to be 24 months. Therefore, the construction of Phase 2 is likely to last less than a year. Project DCC9 and DCC10 cover the installation of battery energy systems, with a short construction phase and limited construction traffic. Projects DCC12 and DCC13 are residential developments and likely to generate construction traffic along the MHPGC Project 'affected road' links. The respective air quality assessment for these projects concluded that during the construction phase traffic is likely to be below the IAQM and EPUK screening criteria (IAQM, 2017) and screened out construction traffic from further assessment. Given the above and the fact baseline air quality is comfortably below the AQALs, it is unlikely that cumulative construction traffic will result in a significant impact. The magnitude of impact from the MHPGC Project is negligible. The magnitude of impact from Tier 1 projects are expected to be the same or similar to the impact from construction of the MHPGC Project. <u>Tier 2</u> No relevant cumulative projects have been identified. <u>Tier 3</u> The Tier 3 projects are not considered to raise the category of magnitude of impact beyond what is assessed for Tier 1, summarised as medium for intensive agricultural land holdings and low for other land uses.

	Cumulative Effects Assessment
Sensitivity of receptor	There are high sensitivity receptors (residential properties) and ecological receptors within 200m of the 'MHPGC Project 'affected road' links.
Significance of effect	The likely significant effects from cumulative construction traffic is not significant .
Further mitigation and residual significance	No mitigation measures for air quality receptors is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in (Table 7.18), is not significant in EIA terms.

7.10.4 Proposed monitoring

Site specific monitoring is not proposed because the assessment concluded that MHPGC Project would not give rise to significant effects for air quality, either alone or when considered cumulatively with other plans, projects or activities.

7.11 Transboundary effects

- 7.11.1.1 A screening of transboundary impacts has been carried out and any potential for significant transboundary effects with regard to air quality from the construction, O&M and decommissioning phases of the MHPGC Project upon interests of other states has been assessed as part of the PEIR.
- 7.11.1.2 The potential transboundary impacts are screened within **Volume 1, Annex 4.2: Transboundary Screening, of the PEIR**. There are no identified pathways through which either direct or indirect impacts could result in significant transboundary effects on the air quality of a European Economic Area (EEA).

7.12 Inter-related effects

- 7.12.1.1 Inter-related effects are the combined impact of multiple aspects of the MHPGC Project on a single receptor. These are as follows:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the MHPGC Project (construction, O&M and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases;
 - 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.
- 7.12.1.2 For Air Quality, the following potential impacts have been considered within the inter-related assessment:
- The potential for impacts associated with emissions of dust and air pollutants from construction and decommissioning activities during the construction and decommissioning phases to interact.
 - This chapter has been informed by traffic flows which are defined and assessed in **Volume 3, Chapter 5: Traffic and transport**. The air quality assessment has taken into account effects in relation to human receptors and ecological features.
- 7.12.1.3 Inter-related effects are assessed within **Volume 4, Chapter 5: Inter-related Effects, of the PEIR** with no likely significant inter-related effects anticipated.

7.13 Summary

7.13.1 Summary of effects

- 7.13.1.1 This chapter has assessed the potential impacts on air quality from the MHPGC Project.
- 7.13.1.2 **Table 7.30** presents a summary of impacts and confirms the residual effects.

7.13.2 Summary of secondary mitigation and monitoring

- 7.13.2.1 No secondary mitigation is proposed as detailed in **Table 7.30**.

Table 7.30: Summary of potential impacts and residual effects

Impact	Sensitivity receptor	of	Magnitude of impact	Significance effect	of	Secondary mitigation monitoring	and	Residual effect
Construction phase								
Emissions of dust from construction activities	Human receptors: High Ecological receptors: High		Negligible (with embedded mitigation)	Not significant		Not applicable		Not significant
Emissions of air pollutants from construction traffic	Human receptors: High Ecological receptors: High		Negligible	Not significant		Not applicable		Not significant
Decommissioning phase								
Emissions of dust from decommissioning activities	Human receptors: High Ecological receptors: High		Negligible (with embedded mitigation)	Not significant		Not applicable		Not significant
Emissions of air pollutants from decommissioning traffic	Human receptors: High Ecological receptors: High		Negligible	Not significant		Not applicable		Not significant

7.14 Next steps

- 7.14.1.1 At this stage, the vehicle movements generated by construction activities and their associated routes, as set out in Volume 3, Chapter 5: Traffic and Transport, of the PEIR, are not fixed and likely subject to change post-PEIR. Therefore, the potential risk of tracked out dust and air quality effects associated with emissions arising from construction-related traffic will be reassessed as part of the ES that accompanies the application for development consent. This will include the identification of mitigation measures appropriate to the level of risk presented by the MHPGC Project.
- 7.14.1.2 Agreement will be sought regarding the scope of any more detailed air quality assessment, and any identified mitigation requirements through consultation with the Environmental Health Officers at DCC (if required) after the PEIR is submitted.

7.15 References

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