LLŶR FLOATING OFFSHORE WIND PROJECT

Llŷr 1 Floating Offshore Wind Farm

Environmental Statement

Volume 2: Chapter 14 – Air Quality

August 2024

Prepared by: Llŷr Floating Wind Ltd

FLOVENTIS ENERGY

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Acronyms and abbreviations

Acronym or Abbreviation	Definition	Acronym or Abbreviation	Definition
AADT	Annual Average Daily Traffic	LDV	Light Duty Vehicles
AQAL	Air Quality Assessment Levels	NDF	National Development Framework
AQAP	Air Quality Action Plan	NO	Nitric Oxide
AQMA	Air Quality Management Area	NO_2	Nitrogen Dioxide
AQS	Air Quality Strategy	NO_x	Nitrogen Oxides
CAZ	Clean Air Zones	OEP	Office for Environmental Protection
CEA	Cumulative Effects Assessment	PCC	Pembrokeshire County Council
CEMP	Construction Environmental Management Plan	PINS	Planning Inspectorate
CO	Carbon Monoxide	$PM_{2.5}$	Fine Particulate Matter
DEFRA	Department for Environment Farming and Rural Affairs	PM_{10}	Particulate Matter
DMP	Dust Management Plan	PPW	Planning Policy Wales
EEA	European Economic Area	RLB	Red Line Boundary
EU	European Union	SAC	Special Area for Conservation
HC	Hydrocarbons	SO_2	Sulphur Dioxide
HDV	Heavy Duty Vehicles	SSSI	Site of Special Scientific Interest
HGZ	Heavy Goods Vehicle	WTG	Wind Turbine Generators
IAM	Impact Assessment Matrix	WHO	World Health Organisation
IAQM	Institute of Air Quality Management	ZoI	Zone of Influence
LAQM	Local Air Quality Management		

Glossary of project terms

Term	Definition
The Applicant	The developer of the Project, Llŷr Floating Wind Ltd.
Array	All wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure within the Array Area, as defined, when considered collectively, excluding the offshore export cable(s).
Array Area	The area within which the wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure will be located.
Floventis Energy	The company developing the proposed Project, a joint venture between Cierco Ltd and SBM Offshore Ltd.
Landfall	The location where the offshore export cable(s) from the Array Area, as defined, are brought onshore and connected to the onshore export cables (as defined) via the transition joint bays (TJB).
Llŷr 1	The proposed Project, for which the Applicant is applying for Section 36 and Marine Licence consents. Including all offshore and onshore infrastructure and activities, and all project phases.
Marine Licence	A licence required under the Marine and Coastal Access Act 2009 for marine works which is administered by Natural Resources Wales (NRW) Marine Licensing Team (MLT) on behalf of the Welsh Ministers.
Offshore Development Area	The footprint of the offshore infrastructure and associated temporary works, comprised of the Array Area and the Offshore Export Cable Corridor, as defined, that forms the offshore boundary for the S36 Consent and Marine Licence application.
Offshore Export Cable	The cable(s) that transmit electricity produced by the WTGs to landfall.
Offshore Export Cable Corridor (OfECC)	The area within which the offshore export cable circuit(s) will be located, from the Array Area to the Landfall.
Onshore Development Area	The footprint of the onshore infrastructure and associated temporary works, comprised of the Onshore Export Cable Corridor and the Onshore Substation, as defined, and including new access routes and visibility splays, that forms the onshore boundary for the planning application.
Onshore Export Cable(s)	The cable(s) that transmit electricity from the landfall to the onshore substation.
Onshore Export Cable Corridor (OnECC)	The area within which the onshore export cable circuit(s) will be located.
proposed Project	All aspects of the Llŷr 1 development (i.e. the onshore and offshore components).
Onshore Substation	Located within the Onshore Development Area, converts high voltage generated electricity into low voltage electricity that can be used for the grid and domestic consumption.
Section 36 consent	Consent to construct and operate an offshore generating station, under Section 36 (S.36) of the Electricity Act 1989. This includes deemed planning permission for onshore works.

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14. AIR QUALITY

14.1 Introduction

1. Llŷr Floating Wind Limited (hereafter the Applicant) is proposing to develop the Llŷr 1 Floating Offshore Wind Farm (hereafter referred to as the proposed Project), located approximately 35 km off the coast of Pembrokeshire in the Celtic Sea.
2. The proposed Project is a test and demonstration wind farm development, comprising up to 10 wind turbine generators (WTGs). The proposed Project will make landfall at Freshwater West before connecting into Pembroke Dock power station and the national grid network.
3. The Applicant is seeking a Section 36 consent and Marine Licence for Llŷr 1, and this chapter forms part of the Environmental Statement (ES) which is submitted in support of those consent applications. This chapter describes the potential impacts and effects of the proposed Project on air quality during the construction, operation and maintenance and decommissioning phases, and includes mitigation and good practice measures to reduce the impacts of the proposed Project on local air quality.
4. **Section 14.9** of this ES chapter provides a summary of the impact assessment undertaken and any residual significant effects on air quality following consideration of any mitigation measures.
5. The assessment presented in this chapter should be read in conjunction with the following linked and supporting chapters:
   - **Chapter 04: Description of the proposed Project** provides further details of the project design parameters.
   - **Chapter 05: EIA Approach and Methodology** provides further details of the general framework and approach to the EIA.
6. The assessment has been undertaken by AECOM. Further details of the proposed Project Team's competency are provided in **Appendix 1A: Statement of Competence**.
7. Within the context of air quality, this assessment considers the potential emissions from activities associated with the proposed Project:
   - Fugitive emissions of particulate matter (dust, PM_{10}) from construction and demolition works; and
   - Changes in road traffic emissions from additional vehicle movements on public roads.

14.2 Legislation, Policy and Guidance

8. The following sections identify specific legislation, policy and guidance that is applicable to the assessment of air quality. Further detail on the wider legislation, policy and guidance relevant to this ES is provided in **Chapter 02: Regulatory and Planning Policy Context**.

14.2.1. Legislation

9. The legislation that is applicable to the assessment of Air Quality is summarised below.

European Union Ambient Air Quality Directive

10. The Clean Air for Europe (European Union, 2001) programme revisited the management of air quality within the European Union (EU) and replaced much of the existing air quality legislation with a single legal act called Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe (Council of the European Union, 2008). This Directive repealed and replaced the EU Framework Directive 96/62/EC on Ambient Air Quality Assessment and Management and its associated Daughter Directives 1999/30/EC (Council of European Communities, 1999),

2000/69/EC (Council of European Communities, 2000), 2002/3/EC (Council of European Communities, 2002), relating to limit values for ambient air pollutants and the Council Decision 97/101/EC (Council of the European Union, 1997) which established a reciprocal exchange of information and data within Member States.

11. Directive 2008/50/EC is transcribed into UK legislation by the Air Quality Standards Regulations 2010, which came into force on 11th June 2010 and as amended in 2016 (H.M. Government, 2016) and the Air Quality Standards (Wales) Regulations 2010 (National Assembly for Wales, 2010). This sets binding limit values or objectives on pollutants with the aim of avoiding, preventing or reducing harmful effects on human health and on the environment.

12. Air pollution limits set by the EU remain in UK law post Brexit, as EU legislation that applied directly or indirectly to the UK before 11.00 p.m. on 31st December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in sections 2 and 3 of the European Union (Withdrawal) Act 2018 (c. 16) (H.M. Government, 2018). Section 4 of the Withdrawal Act 2018 ensures that any remaining EU rights and obligations, including directly effective rights within EU treaties, continue to be recognised and available in domestic law after exit. However, the EU will no longer have a role in enforcement.

National Air Quality Strategy

13. The Environment Act 1995 (H.M. Government, 1995) requires the UK Government to produce a national Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland containing standards, objectives and measures for improving ambient air quality and to keep the policies identified under review.

14. The national air quality objectives of relevance to this assessment, as well as to the local air quality management regime, were set by The Air Quality (Wales) Regulations 2000 (Wales Statutory Instruments. 2000) and the Air Quality (Wales) (Amendment) Regulations 2002 (Wales Statutory Instruments. 2000).

15. A further revision of the AQS (Department for Environment Food and Rural Affairs (Defra), 2007) set objective values to help local authorities manage local air quality improvements in accordance with the EU Air Quality Framework Directive. Some of these objective values have been laid out within the Air Quality Standards (Wales) Regulations 2010 (National Assembly for Wales, 2010).

16. The Environment Act 2021 (H.M. Government, 2021) amends the Environment Act 1995 On 9th November 2021, the Act was approved after being first introduced to Parliament in January 2020 to address environmental protection and the delivery of the Government's 25-year environment plan following Brexit. The Act works in conjunction with the Environment (Wales) Act 2016 (Welsh Government, 2016), in terms of target setting, however the role of enforcement of policy within Wales sits with the Welsh Government. The Environment Act 2021 includes provisions to establish a post-Brexit set of statutory environmental principles and ensure environmental governance through an environmental watchdog, the Office for Environmental Protection (OEP). The Environment Act 2021 establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022. This duty sits within the environmental targets framework outlined in the Environment Act (Part 1). The Environment (Air Quality and Soundscapes) (Wales) Bill (Welsh Government, 2023) was introduced into the Senedd in March 2023 containing a requirement for Ministers to set a $PM_{2.5}$ target. At the time of writing, the $PM_{2.5}$ target has not been set.

17. The AQS objective values have been set down in regulation for the purposes of local air quality management (LAQM). Under the LAQM regime, local authorities have a duty to carry out regular assessments of air quality against the AQS objective values and if it is unlikely that the AQS objective values will be met in the given timescale, they must designate an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) with the aim of achieving the objective values. The boundary of an AQMA is set by the local authority to define the geographical area that is to be subject to the management measures to be set out in a subsequent action plan. It is not unusual for the boundary of an AQMA to include within it relevant locations where air quality is not at risk of exceeding an AQS objective.

18. The principal air quality legislation within the United Kingdom is the 2010 Air Quality Standards (Wales) Regulations (National Assembly for Wales, 2010), which transposes relevant EU Air Quality Directives into national legislation. The AQS objective values, Air Quality Assessment Levels (AQALs) for the pollutants of relevance to this assessment are presented in **Table 14-1.**

Table 14-1. Key national air quality strategy objectives

Pollutant	Averaging Period	Value	Maximum Permitted Exceedances
Nitrogen Dioxide (NO_2)	Annual Mean	40 µg/m^3	N/A
	Hourly Mean	200 µg/m^3	18 times per year
Particulate Matter (PM_{10})	Annual Mean	40 µg/m^3	N/A
	Daily Mean	50 µg/m^3	35 times per year
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	20 µg/m^3	N/A
Sulphur dioxide (SO_2)	15-minute mean	266 µg/m^3	35 times a year (i.e. 99.9th percentile)
	1-hour	350 µg/m^3	24 times a year (99.73rd percentile)
	24-hour	125 µg/m^3	3 times a year, (99.18th percentile)
Carbon monoxide (CO)	Running 8-hour average	10,000 µg/m^3	N/A

Clean Air Strategy

19. In 2019, the UK government released its Clean Air Strategy 2019 (Defra, 2019), which is part of its 25 Year Environment Plan. In recent years, air quality management has primarily focused on NO_2, and its principal source in the UK, i.e. road traffic. However, the Clean Air Strategy broadens the focus to other areas, including domestic emissions from wood burning stoves and from agriculture. This shift in emphasis is part of a longer-term goal to reduce the levels of $PM_{2.5}$ in the air to below the World Health Organisation (WHO) guideline level, which is far lower than the AQS objective value. This shift towards $PM_{2.5}$ is present in The Clean Air for Wales Plan (Welsh Government, 2020), which in a similar manner to the UK's Clean Air

Strategy satisfies the requirements of the National Emissions Ceilings Directive (European Parliament and the Council of the European Union, 2016).

20. Both the Clean Air Strategy and The Clean Air for Wales Plan include the provision of a clear effective guidance on how AQMAs, Clean Air Zones (CAZ) and Smoke Control Areas interrelate and how they can be used by local government to tackle pollution. The UK Clean Air Strategy sets the following reduction target:

- NO_x - reduce emissions against the 2005 baseline by 55% by 2020 and by 73% by 2030; and
- $PM_{2.5}$ - reduce emissions against the 2005 baseline by 30% by 2020 and 46% by 2030.

21. It is noted within the Clean Air Strategy document that the "current legislative framework has not driven sufficient action at a local level". New legislation will seek to shift the focus towards prevention of exceedances rather than tackling pollution when limits have been surpassed. The shift of focus encourages more of a proactive rather than reactive policy framework at regional and local levels on air quality.

14.2.2. National Planning Policy

Planning Policy in Wales

22. Planning policy in Wales is set out by the Welsh Government in Planning Policy Wales (PPW), the most recent revision of which was published in February 2024 (Welsh Government, 2024) and is supplemented by a series of Technical Advice Notes and Government Circulars. These documents detail planning policies for Wales, and how these are expected to be applied.

23. Air Quality is considered as an important element of the natural environment within PPW, setting out a stance on air quality for planning within the context of Welsh air quality standards.

National Development Framework

24. In conjunction with PPW, the National Development Framework (NDF) (published as Future Wales – the National Plan 2040) (Welsh Government, 2021b) set out how the planning system at a national, regional and local level can assist in delivering sustainable improvement.

25. The key policies and paragraphs that are relevant to air quality from PPW and the NDF are listed in **Table 14-2.**

Table 14-2. A summary of national planning policy relevant to air quality

Summary of policy	How and where it is considered in the chapter
Planning Policy Wales, Paragraph 6.7.2 states: *"National air quality objectives are not 'safe' levels of air pollution. Rather they represent a pragmatic threshold above which government considers the health risks associated with air pollution are unacceptable. Air just barely compliant with these objectives is not 'clean' and still carries long-term population health risks. Nitrogen dioxide and particulate matter, which are the pollutants of primary national concern from a public health perspective, currently have no safe threshold defined and therefore the lower the concentration of those pollutants the lower the risks of adverse health effects. It is desirable to keep levels of pollution as low as possible."*	Throughout **Chapter 14.**

Summary of policy	How and where it is considered in the chapter
Planning Policy Wales, Paragraph 6.7.14 states: *" Proposed development should be designed wherever possible to prevent adverse effects to amenity, health and the environment but as a minimum to limit or constrain any effects that do occur. In circumstances where impacts are unacceptable, for example where adequate mitigation is unlikely to be sufficient to safeguard local amenity in terms of air quality and the acoustic environment it will be appropriate to refuse permission."*	Throughout **Chapter 14.**
Planning Policy Wales, Paragraph 6.7.26, states: *"Planning authorities must consider the potential for temporary environmental risks, including airborne pollution and surface and subsurface risks, arising during the construction phases of development. Where appropriate planning authorities should require a construction management plan, covering pollution prevention, noisy plant, hours of operation, dust mitigation and details for keeping residents informed about temporary risks"*	The construction phase assessment in **Chapter 14.**
With respect to air quality, the National Development Framework states: *"Taking an integrated approach is also key to ensuring new development provides the critical mass of people needed to help fund and sustain infrastructure and services, as well as ensuring average levels of airborne pollution continue to be reduced"*	Throughout **Chapter 14.**

14.2.3. Local Planning Policy

26. The current Pembrokeshire Local Plan (Pembrokeshire County Council, 2013) establishes development strategy and policies to guide the development and use of land in Pembrokeshire.

Table 14-3. A summary of local planning policy relevant to air quality

Summary of policy	How and where it is considered in the chapter
Pembrokeshire Local Plan Policy Chapter 6 states: *"Development will be permitted where the following criteria are met: It would not result in a significant detrimental impact on local amenity in terms of visual impact, loss of light or privacy, odours, smoke, fumes, dust, air quality or an increase in noise or vibration levels."*	Throughout **Chapter 14.**

14.2.4. Guidance

27. Additional sources of guidance referred to in this chapter include published guidance from the Welsh Government on local air quality management (Welsh Government, 2017) and Institute

of Air Quality Management (IAQM) Land-Use Planning and Development Control: Planning for Air Quality (IAQM & EPUK, 2017), both of which are outlined as references in PPW. The IAQM also provide guidance particularly relevant to assessment of construction and demolition, with their professional guidance document, Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024)**.**

14.3 Stakeholder Engagement and Consultation

28. Consultation with statutory and non-statutory organisations is a key element of the EIA process. Consultation with regards to Air Quality has been undertaken to inform the approach to, and scope of, the assessment.

29. Stakeholders for the proposed Project include statutory consultees, landowners, local communities and other sea users. In addition to the statutory consultation process, there has been ongoing engagement with statutory and non-statutory consultees to steer the development of the proposed Project and this is detailed in **Table 14-4.**

14.3.5. Summary of Stakeholder Consultations

Table 14-4. Summary of the key issues raised by consultees and how each issue was addressed

Consultee	Consultation type and date	Comment raised	How issue has been addressed and location of response in chapter
Scoping			
Pembrokeshire County Council (PCC)	Email, 9th June 2023	Scope of Air Quality Assessment to be undertaken.	No response received.
Pre-application			
Pembrokeshire County Council (PCC)	Email, 9th August 2023	Outlined scheme and provided an overview of the air quality impact assessment.	Assessment method employed throughout the air quality chapter.

14.4 Approach to Assessment

14.4.6. Overview

30. **Chapter 05: EIA Approach and Methodology** provides a summary of the general impact assessment methodology applied in this ES. The following sections provide further detail on the specific methodology used to assess the potential impacts on Air Quality.

31. The approach to the assessment of cumulative impacts, interrelated effects and transboundary impacts is provided in **Sections 14.10, 14.11** and **14.12**, respectively.

32. The methodology used for the Air Quality Assessment differs in some respects from the overarching method provided in **Chapter 05: EIA Approach and Methodology**, although the magnitude criteria and significance criteria are comparable. A description of the methodology used in the air quality assessment is set out within this section. The scope of the assessment is described in detail in **Section 14.6** of this Chapter, but in brief this includes:

- An assessment of impacts due to construction dust;
- An assessment of impacts because of construction road traffic emissions; and
- An assessment of impacts because of operational road traffic emissions.

33. The significance of potential effects has been evaluated using a systematic approach together with the expert judgement of the specialist consultant. The systematic approach is based upon

the identification of the importance/value of receptors and their sensitivity to the proposed Project together with the predicted magnitude of the potential impact.

34. The terms used to define receptor sensitivity and magnitude of impact are based on IAQM Guidance.

14.4.7. Construction Dust Assessment Methodology

35. The movement and handling of soils and spoil during construction activities for the proposed Project is anticipated to lead to the generation of some short-term airborne dust. The occurrence and significance of dust generated is difficult to estimate and depends heavily upon the nature of the activity being carried out and the meteorological and ground conditions at the actual time and location of the work.

36. At present, there are no statutory UK or EU standards relating to the assessment or control of dust. The emphasis of the regulation and control of construction dust, therefore, is through the adoption of good practice when working on site to mitigate any potential impacts. It is intended that significant adverse environmental effects are avoided at the design stage and through embedded mitigation where possible, including the use of good working practices to control dust emissions at source.

37. The IAQM provides guidance for good practice and a framework of approaches for qualitative assessment of risk of dust emissions from construction and demolition activities (IAQM, 2024). The guidance considers the risk of dust emissions from unmitigated activities to cause human health impacts (associated with PM_{10}), dust soiling impacts, and ecological impacts (such as physical smothering, and chemical impacts for example from deposition of alkaline materials). The appraisal of risk is based on the scale and nature of activities and on the sensitivity of receptors, and the outcome of the appraisal is used to determine the level of good practice mitigation required for adequate control of dust.

38. The assessment undertaken for the proposed Project is consistent with the overarching approach to the assessment of the impacts of construction, and the application of example descriptors of impact and risk set out in IAQM guidance. It considers the risk of potential impacts occurring with good practice measures and embedded mitigation in place and if necessary, recommends additional mitigation measures appropriate to the identified risks to receptors. The steps in the assessment are to:

- Identify receptors within the appropriate Study Area for the Site;
- Identify the potential magnitude of emissions through consideration of the scale, duration and location of activities being carried out;
- Establish the sensitivity of the area through determination of the sensitivity of receptors and their distance from construction activities;
- Determine the risk of dust emissions causing significant effects on receptors as a result of the potential magnitude of emissions and the sensitivity of the area, assuming no additional mitigation (beyond the identified development design and impact avoidance measures) is applied;
- Confirm the appropriateness of embedded good practice measures based on the level of risk, to reduce likely effects at receptors so it is not significant, and determine additional measures to mitigate the specific impacts if necessary; and
- Summarise the potential residual effects of the mitigated works.

39. The following four activities involved in the construction phase of the proposed Project have the potential to impact on local air quality, based on the nature of construction activities proposed:

- Demolition (buildings and structures);
- Earthworks (soil stripping, spoil movement and stockpiling);
- Construction (including concrete batching); and
- Trackout (Heavy Goods Vehicle (HGV) movements on unpaved roads and offsite mud on the highway).

40. As the onshore Project boundary is largely comprised of open land, it is anticipated that only relatively minor site clearance works, would be required as part of any preliminary works associated with the construction of the proposed Project. Such site clearance works are not explicitly contained in the IAQM guidance, and for the purposes of this assessment, the closest assessment category available in the IAQM 2024 guidance is 'Demolition'. For this reason, the term 'Demolition' is used throughout the remainder of the report to refer to site clearance and potential "demolition" activities.

Construction Dust Receptor Identification

41. Screening criteria from the IAQM to determine whether a construction dust assessment is required includes determining whether receptors are present. The screening criteria for human receptors which is generally used in industry best practice is 250 m from the boundary of the site or 50 m from the construction traffic route up to 250 m from the site. These distances are conservative whereby beyond this distance a negligible mass of material will persist.

42. The screening criteria for ecological receptors cited in the IAQM guidance is 50 m from the boundary of the site or 50 m from the construction traffic route up to 250 m from the proposed Project. This smaller distance relative to human receptors is used as the larger dust particles which affect ecological receptors are less likely to travel beyond this distance. There are no ecological receptors within this distance of the onshore Project boundary, ecological receptors are therefore not considered within this assessment.

Construction Dust Significance Criteria

Magnitude of Impact

43. The scale or magnitude of potential impacts (both beneficial and adverse) is determined by a combination of three criteria: scale of change, spatial extent of change and duration of change, as outlined in **Chapter 05: EIA Approach and Methodology**, **Section 5.4.9.**

44. The criteria for defining magnitude of impact for the purpose of the construction dust assessment on Air Quality are provided in **Table 14-5.**

Table 14-5. A summary of the magnitude criteria that are associated with construction dust impacts

Magnitude	Demolition	Earthworks	Construction	Trackout
Large	Total building volume >50,000 m^3, potentially dust construction material (e.g. concrete), on-site crushing and screening, demolition	Site area >1 ha potentially dusty soil type (e.g. clay). >10 heavy earth moving vehicles at once, bunds >8 m high,	Total building volume >100,000 m^3, on-site concrete batching, sandblasting.	>50 HDV peak outward movements per day, potentially dusty surface material (e.g. high clay

Magnitude	Demolition	Earthworks	Construction	Trackout
	activities >20 m above ground level.	total material moved >100,000 tonnes.		content), unpaved road length >100 m.
Medium	Total building volume 20,000 – 50,000 m^3, potentially dusty construction material, demolition activities 10 to 20 m above ground level.	Site area 0.25 – 1 ha, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles at once, bunds 4-8 m high, total material moved 20,000 – 100,000 tonnes.	Total building volume 25,000 – 100,000 m^3, potentially dusty materials e.g. concrete, on-site concrete batching.	10 – 50 HDV peak outward movements per day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 – 100 m.
Small	Total building volume <20,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground level, demolition during wetter months.	Site area <0.25 ha, large grain soil type (e.g. sand), <5 heavy earth moving vehicles at once, bunds <4 m high, total material moved <20,000 tonnes.	Total building volume <25,000 m^3, low dust potential construction materials. e.g. metal/timber.	<10 HDV peak outward movements per day, surface material low dust potential, unpaved road length <50 m.

Sensitivity of Receptor

45. Receptor sensitivity is defined as the degree to which a receptor would be affected by an impact. The sensitivity of the receptor is characterised by three factors: vulnerability, recoverability and importance, as outlined in **Chapter 05: EIA Approach and Methodology**, **Section 5.4.10.**

46. The criteria for defining receptor sensitivity for the purpose of the assessment of construction dust on Air Quality are provided in **Table 14-6** to **Table 14-8.**

Table 14-6. A summary of the criteria determining a receptor's sensitivity

Receptor Sensitivity	Human Perception of Dust Soiling	Human Health with Respect to PM_{10}	Sensitivity of Ecological Receptors
High sensitivity	Enjoy a high level of amenity; appearance/ aesthetics/ value of property would be diminished by soiling; receptor expected to be present continuously.	Public present for 8 hours per day or more, e.g. residential, schools, care homes and hospitals/healthcare centres.	Locations with an international or national designation and the designated features may be affected by dust soiling.
Medium sensitivity	Enjoy a reasonable level of amenity; appearance/	Only workforce present (no residential or high	Locations with a national designation where the

Receptor Sensitivity	Human Perception of Dust Soiling	Human Health with Respect to PM_{10}	Sensitivity of Ecological Receptors
	aesthetics/ value of property could be diminished by soiling; receptor not expected to be present continuously.	sensitivity receptors) 8-hours per day or more.	features may be affected by dust deposition.
Low sensitivity	Enjoyment of amenity not reasonably expected; appearance/ aesthetics/ value of property not diminished by soiling; receptors are transient / present for limited period, e.g. playing fields, farmland, footpaths, short term car parks (depending on parking duration).	Transient human exposure, e.g. footpaths, playing fields and parks.	Locations with a local designation where the features may be affected by dust deposition.

47. Distances have been measured from source to human receptor in bands of less than 20 m, less than 50 m, less than 100 m and less than 250 m for earthworks and construction. For trackout, the receptor distances have been measured from receptor to trackout route (up to 50 m) and up to 250 m from the construction site exit. These distance bands have been applied in **Table Table 14-7** and **Table 14-8.**

48. Distances for ecological receptors are banded in <20 m or <50 m, as shown in **Table 14-9.**

Table 14-7. Sensitivity of the area to dust soiling on people/ property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	≥100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Moderate	≥1	Medium	Low	Low	Low
Low	≥1	Low	Low	Low	Low

Table 14-8. Sensitivity of the Area to Human Health

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High (annual mean PM_{10} concentration <24 µg/m^3)	≥1	Medium	Low	Low	Low
Medium (annual mean	≥1	Low	Low	Low	Low

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
PM_{10} concentration <24 µg/m^3)					
Low	≥1	Low	Low	Low	Low

Table 14-9. Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	High
Moderate	Medium	Low
Low	Low	Low

Risk Definition

49. The potential risks from emissions from unmitigated construction activities have been defined with reference to the magnitude of the potential emission and the highest sensitivity receptor(s) within the area, as summarised in **Table 14-10.**

Table 14-10. Classification of risk of unmitigated construction impacts

Area Sensitivity to Activity	Magnitude		
	Large	Medium	Small
Demolition			
High	High risk	Medium risk	Medium risk
Medium	High risk	Medium risk	Low risk
Low	Medium risk	Low risk	Negligible
Earthworks			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Construction			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Trackout			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Low risk	Negligible
Low	Low risk	Low risk	Negligible

Construction Dust Assessment Methodology Summary

50. To summarise, the methodology for determining the risk of unmitigated impacts considers impacts on dust soiling and on human health. The steps used in doing so for dust soiling are as follows:

- Define the potential dust emission magnitude (**Table 14-5**);
- Define the sensitivity of the area (**Table 14-7**), this needs to consider:
    - Receptor sensitivity (**Table 14-6**);
    - Receptor Distance; and
- Classification of risk due to unmitigated impacts (**Table 14-10**).

Construction Dust Assessment - Significance of Effect

51. As set out in **Chapter 05: EIA Approach and Methodology**, an Impact Assessment Matrix (IAM) is commonly used to determine the significance of effect which is a function of the sensitivity of the receptor and the magnitude of the impact, however the construction dust assessment differs from this approach. For potential amenity effects, such as those related to dust deposition, the aim is to bring forward a scheme, to include mitigation measures as necessary that minimise the potential for amenity, human health, and ecological impacts because of the proposed Projects' construction works.

52. The IAQM guidance does not provide a method for the evaluation of impacts on receptors from construction dust, rather a means to determine the level of mitigation required to avoid significant impacts on receptors. The guidance indicates that application of appropriate mitigation should ensure that residual effects will normally be 'not significant'.

14.4.8. Construction and Operational Phase Traffic Assessment Methodology

53. The incomplete combustion of fuel in vehicle engines results in the presence of combustion products of CO, PM_{10}, and $PM_{2.5}$ in exhaust emissions as well as hydrocarbons (HC) such as benzene and 1,3-butadiene. Similarly, but to a lesser extent, any sulphur in the fuel can be converted to SO_2 that is then released to atmosphere. In addition, at the high temperatures and pressures found within vehicle engines, some of the nitrogen in the air and the fuel is oxidised to form oxides of nitrogen, mainly in the form of nitric oxide (NO), which is then converted to NO_2 in the atmosphere. NO_2 is associated with adverse effects on human health. Better emission control technology and fuel specifications are reducing emissions per vehicle across the UK vehicle fleet over the long term.

54. Although SO_2, CO, benzene, and 1,3-butadiene are present in motor vehicle exhaust emissions, detailed consideration of the associated impacts on local air quality is not considered relevant in the context of this proposed Project. This is because the released concentrations of these pollutants are low enough to not be likely to give rise to significant effects. In addition, no areas within the administrative boundaries of PCC are at risk of exceeding the relevant objectives for these pollutants, therefore the risks to the attainment of the relevant air quality objectives in the vicinity of the proposed Project are considered negligible. Emissions of SO_2, CO, benzene, and 1, 3-butadiene from road traffic are therefore not considered further within this assessment.

55. The exhaust emissions from road vehicles that do have the potential to affect the ambient concentrations of pollutants are NO_2, PM_{10} and $PM_{2.5}$. Therefore, the assessment of the significance of road traffic air quality impacts only considers these pollutants.

56. Guidance published by the IAQM & Environmental Protection UK (IAQM & EPUK, 2016) proposes an initial screening step with a threshold, in terms of Annual Average Daily Traffic (AADT) flow, to warrant a detailed air quality assessment of road traffic as:

- A change of more than 500 Light Duty Vehicles (LDVs, all vehicles less than 3.5 tonnes gross weight) or 100 Heavy Duty Vehicles (HDVs) when outside of an AQMA; and

- A change of more than 100 Light Duty Vehicles (LDV, all vehicles less than 3.5 tonnes gross weight) or 25 Heavy Duty Vehicles (HDVs) when within or adjacent to an AQMA.

57. The proposed Project is not expected to generate vehicles traffic on this scale during construction or operation, even if traffic is routed through the Pembroke AQMA. Emissions from road traffic can therefore be screened out at this initial stage and they will not be considered further in this assessment.

14.4.9. Study Area

58. The Study Area for the assessment of construction dust has been defined based on the distances contained within the IAQM guidance on the assessment of dust from demolition and construction.

59. The screening criteria for human receptors is 250 m from the boundary of the construction site. This is illustrated in **Volume 5: Figure 14-1**, which shows a 250 m zone from the boundary and the residential properties within that distance.

14.4.10. Data Sources

Site Specific Surveys

60. The Air Quality assessment has been undertaken using published information on baseline air quality. No site-specific surveys were required to be undertaken for the air quality assessment.

Desk Study

61. A comprehensive desk-based review was undertaken to inform the baseline for Air Quality. Key data sources used to inform the assessment are set out in **Table 14-11.**

Table 14-11. Summary of key desktop sources

Title	Source	Year	Brief description	Author
Air Quality monitoring carried out in Pembroke	Monitoring carried out by PCC	2017-2021	NO_2 monitoring data	PCC
Background Air Quality	Mapped background concentrations for the UK	2023	NO_X, NO_2, PM_{10} and $PM_{2.5}$	Defra

14.5 Baseline

62. The following sections describe the baseline environment relating to Air Quality.

14.5.11. Existing Baseline

Local Air Quality Management

63. Pembrokeshire County Council has declared two AQMAs for exceedances of annual mean NO2 concentrations, Haverfordwest and Pembroke. Both AQMA boundaries are either close to, or have busy roads within them, recognising the influence vehicle emissions have upon local air quality. It is noted that as of the Pembrokeshire County Council 2022 Progress Report (PCC, 2022), Pembroke AQMA has been compliant for two years and Haverfordwest AQMA has been compliant for five years.

Monitoring Data

64. The majority of PCC's air quality monitoring is focused around Haverfordwest and Pembroke. Monitoring data for sites non-automatic sites in Pembroke (as those which are closest to the proposed Project) are presented in **Table 14-12.**

Table 14-12. Pembroke air quality monitoring data 2017-2021

Tube Location ID	AQMA	Annual Mean NO_2 level (µg/m³)				
		2017	2018	2019	2020	2021
PCC40 (Main St, Pembroke)	Yes	20.5	20.7	21.0	15.2	17.8
PCC41 (Main St, Pembroke)	Yes	23.8	24.4	24.5	17.2	21.0
PCC42 (Main St, Pembroke)	No	19.4	19.7	22.1	14.2	16.7
PCC43 (Main St, Pembroke)	Yes	31.9	31.7	32.5	22.5	26.1
PCC44 (Main St, Pembroke)	Yes	33.3	36.4	35.4	26.1	29.5
PCC45 (Main St, Pembroke)	Yes	38.2	**41.2**	39.3	29.1	36.0
PCC47 (Main St, Pembroke)	Yes	24.8	23.6	23.9	15.7	19.9
PCC48 (Main St, Pembroke)	No	12.5	12.1	12.6	8.6	10.4

65. Annual mean concentrations of NO_2 in Pembroke were below the annual mean air quality objective value of 40 µg/m³, between 2017 and 2021 for all sites. The one exception was site PCC45 in 2018, where a concentration of 41.2 µg/m³ was recorded. All sites presented in **Table 14-12** are located along main roads in the centre of Pembroke.

66. There is one currently operational automatic monitor in Pembrokeshire, situated at Narberth. Concentrations of annual mean NO_2 recorded at this site for years 2017-2021 are between 3 and 4 µg/m³. PM_{10} and $PM_{2.5}$ is also monitored at Narberth, annual mean PM_{10} concentrations between 2017-2021 are between 10.1 and 12 µg/m³, annual mean $PM_{2.5}$ concentrations between 2017-2021 are between 5.9 and 7 µg/m³.

67. The Department for Environment Farming and Rural Affairs (DEFRA) provides data for background concentrations of NO_X, NO_2, PM_{10} and $PM_{2.5}$ at 1 km² grid squares throughout the UK (Defra, 2023). As expected for all pollutants, background concentrations in the Study Area are low. The highest annual mean concentration of each pollutant for all grids within the Angle Peninsula to Pembroke Power Station are presented in **Table 14-13** for the year 2023.

Table 14-13. Defra background maps annual mean concentration data 2023

NO_2 (µg/m³)	NO_X (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
6.9	8.8	10.4	6.1

68. Results presented in **Table 14-13** show that background concentrations in the vicinity of the proposed Project are very small within the context of air quality objective values outlined previously.

69. In summary, existing air quality in the vicinity of the proposed Project can be described as generally very good. The only exceptions are small areas within Pembroke and Haverfordwest where road traffic has a large impact on local air quality.

14.5.12. Future Baseline

70. This section considers any changes to the baseline conditions described above that might occur over the lifespan of the proposed Project, but in their absence (i.e. in the event that they are not installed). In the case of local air quality, the future baseline is likely to remain comparable to current conditions. There is a projected general downward trend in road traffic emissions throughout the UK due to a shift to cleaner vehicles over time, this downward trajectory in concentrations is likely to be seen within the Study Area at locations in close proximity to traffic routes.

14.6 Scope of the Assessment

71. As set out in **Section 14.4**, this assessment considers the design parameters of the proposed Project which are predicted to result in the greatest environmental impact, known as the 'realistic worst-case scenario'. The realistic worst-case scenario represents, for any given receptor and potential impact on that receptor, various options in the Project Design Envelope that would result in the greatest potential for change to the receptor in question. Given that the realistic worst-case scenario is based on the design option (or combination of options) that represents the greatest potential for change, confidence can be held that the development of any alternative options within the design parameters will give rise to effects no greater or worse than those included in this impact assessment.

72. Accordingly, the design scenarios identified in **Table 14-4** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group within the Air Quality Study Area. These scenarios have been selected from the details provided in **Chapter 04: Description of the Proposed Project**.

Table 14-14. Design scenario considered for the assessment

Potential impact	Design scenario	Justification
Construction		
Increased emissions of fugitive dust and particulate matter	Projected onshore cable route and selected substation location. The maximum duration over which works could occur.	The reasonable worst case design scenario for impacts on amenity and human health due to fugitive dust and particulate matter.
Emissions from construction road traffic	Projected onshore cable route and selected substation location. Worst case routing of road traffic within the air quality Study Area. The maximum duration over which works could occur.	The reasonable worst case design scenario for impacts on human health due to emissions from road traffic.
Operation and maintenance		
Emissions from operational road traffic	Worst case routing of road traffic within the air quality Study Area.	The reasonable worst case design scenario for impacts human health due to emissions from road traffic.
Decommissioning		
N/A		

14.6.13. Impacts scoped out of assessment

73. Several impacts have been scoped out of the assessment for Air Quality during EIA scoping. These impacts are outlined, together with the justification for scoping them out, in **Table 14-15.**

Table 14-15. Potential impacts scoped out the assessment for air quality

Potential impact	Justification
Construction	
N/A	
Operation and maintenance	
N/A	
Decommissioning	
Increased emissions of fugitive dust and particulate matter	Emissions during decommissioning would be of no greater magnitude or duration than during construction.
Emissions from decommissioning road traffic	Emissions during decommissioning would be of no greater magnitude or duration than during construction.

14.6.14. Assessment Assumptions and Limitations

74. No significant assessment limitations have been identified. It should be noted, however, that the assessment has been undertaken using a qualitative methodology with the assumption that the control measures identified in the Outline Construction Environmental Management

Plan (CEMP) (**Volume 6: Appendix 4A**) will be implemented to deal with unforeseen circumstances where a significant effect could potentially occur, should this arise.

14.7 Embedded Mitigation, Management Plans and Best Practice

75. The design of the proposed Project includes embedded mitigation measures and reference to various management plans (see **Table 14-16**) that will be produced as conditions of consent, and which will further mitigate potential impacts. This approach has been employed to demonstrate commitment to mitigation measures by including them in the design of the proposed Project and as such these measures have been considered within the assessment presented in **Section 14.8** below. Assessment of sensitivity, magnitude and therefore significance includes the implementation of these measures.

Table 14-16. Mitigation measures, management plans and best practice adopted as part of the proposed project

Embedded Mitigation Measures, Management Plans and Best Practice	Justification
Management Plans	
Standard dust control measures set out within a CEMP, including the measures set out in **Section 84** of this chapter and a Construction Dust and Air Quality Management Plan as outlined in **Volume 6: Appendix 4A – Outline CEMP, Section 4.3.4.**	To enable sufficient control of fugitive dust emissions under all foreseeable conditions.

14.8 Assessment of Environmental Effects

76. The impacts and effects (both beneficial and adverse) associated with the construction, operation and maintenance and decommissioning of the proposed Project are outlined in the sections below. The assessments consider the embedded mitigation measures described in **Section 14.7**.

14.8.15. Construction Effects

Construction Dust

77. This section summarises the findings of the construction dust and particulate matter assessment.

Magnitude of impact

78. Magnitude of risk of dust impacts for the proposed Project, based on examples set out in the methodology section are set out in **Table 14-17.**

Table 14-17. Dust emission magnitude of construction/ demolition activities for the proposed Project

Activity	Dust Emission Magnitude Assigned for Proposed Project	Reasoning
Demolition	**Small**	Demolition activities will be minimal, the total volume of material being removed is likely to be <20,000 m^3 and not a potentially dusty material.
Earthworks	**Medium**	Despite the reasonably large area of the RLB, the actual space where earthworks are due to take place is long and narrow, this will be unlikely lead to any concentrated dust release episodes. In addition, the soil is listed as

Activity	Dust Emission Magnitude Assigned for Proposed Project	Reasoning
		freely draining loamy in nature and will therefore have a low dust potential.
Construction	**Medium**	The area of construction is as described in the earthworks row. There will be potentially dust material for infill, but minimal structures with this project.
Trackout	**Medium**	Due to the long and narrow footprint of the site, there are likely to be many vehicle access points for the site and because of this, there is unlikely to be concentrated areas of vehicle movements.

Sensitivity of the receptor

79. To determine the sensitivity of the surrounding receptors to dust soiling, the criteria outlined in **Table 14-17** of the methodology section are initially used to determine receptor sensitivity. Receptors are located within a predominantly agricultural area, where the baseline dust soiling environment would be expected to be high. However, with consideration to the fact that the area is particularly known for natural beauty the receptor sensitivity is assigned as moderate, giving a final sensitivity of the area as **Medium.**

80. To determine the sensitivity of the surrounding receptors to human health, baseline annual mean PM_{10} concentrations have been considered, as presented in the **Section 14.5**. It is estimated that baseline annual mean PM_{10} concentrations are low (as given in **Table 14-13**), the final sensitivity of the area is **Low.**

81. The sensitivity of the area to ecological impacts is assigned as **Medium**, because of the presence of the Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) within and around the landfall area within the red line boundary (RLB). Site works are likely to take place near to designated features and there is the potential for designated features to experience dust deposition, however the features are not considered to be especially sensitive to dust deposition effects.

Significance of the effect (Risk of Impacts from Unmitigated Activities)

82. The risk of impacts from dust soiling and human health caused by unmitigated activities is presented in **Table 14-18.**

Table 14-18. Risk of impacts from unmitigated activities from the proposed Project

Potential Impacts	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low risk	Medium risk	Medium risk	Low risk
Human Health	Negligible	Low risk	Low risk	Negligible
Ecological Receptors	Low risk	Medium risk	Medium risk	Low risk

83. The risk assessment for construction dust indicates that there would be a **Low** to **Medium** risk of unmitigated dust impacts on human health (PM_{10}) and a **Low** to **Medium** risk for dust soiling from unmitigated activities on amenity and ecological features for the proposed Project. These risk classifications are solely used to select the appropriate schedule of mitigation measures, examples of which are set out in guidance published by the IAQM (2024). For all but the

smallest of sites the use of the high-risk schedule of measures represents good working practice.

Further mitigation and residual effect

84. Given the identification of a potential **Medium** impact risk at some locations during certain parts of the works, additional targeted site-specific measures will be identified in the contractors' CEMPs where required. At this stage, however, the requirement for any such measures has not been confirmed. Such measures could include:

- Cutting and grinding operations, if required, will be conducted using equipment and techniques that reduce emissions and incorporate appropriate dust suppression measures;
- Damping down of dust-generating equipment and vehicles within the Site and the provision of dust suppression in all areas of the Site that are likely to generate dust;
- Use water suppression and regular cleaning during earth moving activities;
- Materials stockpiles likely to generate dust enclosed or securely sheeted, damped down or stabilised as appropriate;
- Covering materials, deliveries or loads entering and leaving the construction site;
- Mixing of grout or cement-based materials will be undertaken using appropriate techniques/ mitigation;
- Cover, seed or fence stockpiles to prevent wind whipping;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable;
- Measures to be taken to keep roads and accesses clean; and
- Vehicle, plant and equipment maintenance records will be kept on-site and reviewed regularly.

85. Taking the above mitigation into consideration, the residual effect from fugitive emissions of dust during construction would **not be significant.**

14.8.16. Summary of Residual Environmental Effects

86. This chapter of the ES has assessed the potential environmental effects on Air Quality from the construction, operation and maintenance and decommissioning phases of the proposed Project. Where significant effects have been identified, additional mitigation has been considered and incorporated into the assessment.

87. **Table 14-19** summarises the impact assessment undertaken and confirms the significance of any residual effects, following the application of additional mitigation.

14.8.17. Monitoring

88. The individuals charged with being responsible for controlling fugitive dust emissions in the CEMP should maintain an ongoing continual visual awareness of dust arisings during the works, to determine if additional control measures are required. No monitoring using active or passive instrumental methods has been identified, however.

14.9 Summary of Effects and Conclusions

89. This section summarises the residual significant effects of the proposed Project on Air Quality following the implementation of mitigation.

90. It is considered that with the implementation of appropriate good practice control measures set out in an appropriate CEMP, including a Construction Dust and Air Quality Management Plan, the potential effect from fugitive emissions of dust during construction would not be significant.

Table 14-19. Assessment summary

Potential Impact	Receptor	Receptor Sensitivity	Magnitude of impact	Significance of effect	Additional Mitigation	Residual Significance of Effect
Construction						
Fugitive emissions of dust and particulate matter	*Residential properties*	*Area Sensitivity: Medium*	*Small to Medium*	*Dust Risk: Low to Medium*	*Standard measures to control dust emissions*	***Not Significant***
	Residential properties	*Area Sensitivity: Medium*	*Small to Medium*	*Dust Risk: Low to Medium*	*Standard measures to control dust emissions*	***Not Significant***
Operation and Maintenance						
N/A						
Decommissioning						
N/A						

14.10 Cumulative Effects of the Project

14.10.18. Introduction

91. Cumulative effects are those effects upon receptors arising from the proposed Project alongside all existing, and/ or reasonably foreseeable projects, plans and activities that result in cumulative effects with any element of the proposed Project. Existing Projects are generally considered as part of the baseline and as such are considered within the impact assessment presented in **Section 14.8** above.

92. This section assesses potential cumulative effects on Air Quality from identified projects, plans and activities that have the potential to act cumulatively with the proposed Project.

93. PINS Advice 17: Cumulative Effects Assessment (2019) suggests that CEA follows a four-stage process. The aim of this approach is to accurately determine relevant projects and associated relationships with scoped in receptors identified in the ES, to be included within the interproject CEA.

94. The approach to the assessment of cumulative effects is detailed in **Volume 6: Appendix 5A – Approach to Cumulative Effects Assessment** and is also summarised in **Table 14-20.**

Table 14-20 PINS Advice 17 stages of the CEA process

CEA Stage	Activity
Stage 1	Determine a zone of influence (ZoI) via desk study for each topic receptor scoped into the ES. This will establish a *long list* of projects within each ZoI that will be shortlisted in Stage 2. This list of plans and projects/activities is drawn up through a desk study of planning applications, development plan documents, relevant development frameworks and any other available sources to identify 'other development' within the ZoI. Information on each project (location, development type, status, etc.) is documented, along with the certainty or tier assigned to the 'other development' (i.e. confidence it will take place in the current form and when it will take place in relation to the project). PINS notes that the project should then consult with the relevant planning authority/ authorities and statutory consultees regarding the long list.
Stage 2	Screening of the long list identified in Stage 1, to establish a short list for the CEA. Screening is based on the criteria presented in the scoping report and subsequent comments by the regulator and statutory consultees. PINS has provided inclusions/ exclusion threshold criteria, against which the potential for 'other development to give rise to significant cumulative effects by virtue of overlaps in temporal scope, the scale and nature of the 'other developments' and /or receiving environment, or any other relevant factors is assessed. From this assessment, a shortlist of 'other developments' to be included in the CEA is produced. It is noted that documented information on each of the 'other developments' is likely to be high level at this stage, outlining the key issues to take forward.
Stage 3	Gathering of all information available on short listed projects generated in Stage 2. At this stage all available data and information about the shortlisted projects that will be included in the CEA is collected to inform the assessment. This should utilise the most current information for each project in the public domain, and assess the assumptions and limitations of the information collected on each shortlisted project.
Stage 4	Each of the shortlisted projects are reviewed in turn by the different topics to assess whether cumulative effects may arise and the nature of those effects (i.e. beneficial or adverse). The significance of the effects on environmental receptors is established within each ES technical chapters. Where significant adverse cumulative effects are identified, mitigation measures are also considered within the CEA

CEA Stage	Activity
	alongside the mechanism to secure that mitigation, e.g. consent condition requirements.

14.10.19. Scope of Cumulative Effects Assessment for Air Quality

95. The following impacts have been scoped into the CEA for Air Quality.

Construction

- Dust.

Operation

- Not applicable

Decommissioning

- Not applicable

96. **Table 14-21** presents the short list of projects identified and included within the CEA for Air Quality.

Table 14-21 List of projects considered for the air quality cumulative effects assessment

Project Name/Developer	Project Type	Tier and Status	Approx. distance from the proposed Project	Construction Timeframe
Erebus (Blue Gem Wind)	Offshore wind	Consented	Within RLB	June 2026 – October 2026
Greenlink Interconnector	Interconnector	Under-construction	Within RLB	2022-December 2024

14.10.20. Cumulative Effect Assessment

Construction

Construction Dust

97. Cumulative effects would only be possible if simultaneous works are being undertaken on more than one project, where the 250 m zones of potential influence for construction dust overlap. In such cases, emissions would still be localised and short-term, and the types of activities being carried out may not coincide. If activities from two projects at once are taking place in the same area, they will be affected by similar prevailing wind conditions, making it unlikely that one location can be affected by two projects simultaneously.

98. As set out in **Section 14.8,** individuals with responsibility for controlling fugitive dust emissions would have the ability to assess the situation on an ongoing basis in order to determine if additional control measures are required, in order to avoid significant risk of cumulative impacts

99. Therefore, the cumulative effect of Construction Dust on Air Quality is considered to be **not significant.**

14.11 Inter-related Effects of the proposed Project

100. The term 'Inter-related' considers the environmental interactions ('inter-relationships') with other receptors within the proposed Project. These are referred to in the Infrastructure

Planning (Environmental Impact Assessment) Regulations 2009 and further described in **Chapter 31: Inter-related Effect Assessment.**

101. As set out in PINS Advice Note 17 (PINS), 2019, *inter-related project effects*, or 'interrelationships between topics', derive from combinations of different project specific impacts which, when acting together on the same receptor, could result in a new or different effect, or an effect of greater significance than the project effects, when considered in isolation. Inter-related effects comprise the following:

102. *Project lifetime effects*: effects that have the potential to occur during more than one phase of the proposed Project (i.e. construction, operation and maintenance and decommissioning) and to interact in a way that could potentially create a more significant effect than if it was assessed in isolation.

103. *Receptor-led effects*: effects that have the potential to interact, spatially and temporally, to create inter-related effects on a receptor.

104. **Chapter 31: Inter-related Effects Assessment** details the approach to the inter-related effects assessment and includes a description of the likely inter-related effects that may occur because of the proposed Project.

105. Air Quality has been scoped out of the inter-related effects assessment. The reason for this is because dust emissions during the construction phase would only affect receptors at the time of release, which would not result in project lifetime effects or receptor led effects.

14.12 Transboundary Effects

106. A transboundary effect refers to the impacts or effects of a project that extend beyond the boundaries of the United Kingdom and have the potential to affect the environment of other countries within the European Economic Area (EEA). These effects can occur either from the proposed Project on its own or when combined with the effects of other projects or activities in the wider geographical area.

107. In terms of the impacts on Air Quality sensitive receptors, impacts will be localised to the extent of the Air Quality Study Area. Given the intervening distance to neighbouring EEA states, there is no potential for transboundary impacts and resultant effects to occur.

14.13 References

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