



Galileo 03 Ltd.

Mynydd Ty-talwyn Energy Park - Environmental Statement Volume III

Appendix 4.3: Air Quality Assessment

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RSK

RSK GENERAL NOTES

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This work has been undertaken in accordance with the quality management system of RSK Group Limited.

Abbreviations

AADT	Annual Average Daily Traffic
AQMA	Air Quality Management Area
AQS	Air Quality Standard
BCBC	Bridgend County Borough Council
Defra	Department for Environment, Food and Rural Affairs
EPUK	Environmental Protection UK
EU	European Union
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LDV	Light Duty Vehicle
LNR	Local Nature Reserve
NPTC	Neath Port Talbot Council
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
PM _{2.5}	Particulate matter of size fraction approximating to <2.5µm diameter
PM ₁₀	Particulate matter of size fraction approximating to <10µm diameter
PPW	Planning Policy Wales
PCM	Pollution Climate Mapping
RSK	RSK Environment Limited
SSSI	Sites of Special Scientific Interest

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1 INTRODUCTION

1.1 Background

1.1.1 This air quality assessment has been prepared by RSK Environment Ltd (RSK) on behalf of Galileo 03 Ltd (part of Galileo Empower UK Ltd) (hereinafter referred to as 'Galileo' or the 'Applicant') to support the proposed Mynydd Ty-talwyn Energy Park (the 'Proposed Development'). The Proposed Development comprises the construction and operation of six wind turbines, ground mounted solar photovoltaic (PV) modules, one project substation, and ancillary infrastructure works.

1.1.2 An air quality assessment has been requested to support this Development of National Significance (DNS) application, in line with the Planning and Environment Decisions Wales (PEDW) Scoping Direction, provided in **Environmental Statement (ES) Volume III, Appendix 1.2: Scoping Direction** within which the following comments have been made:

'The SR acknowledges the proposed access route for AIL deliveries falls within an Air Quality Management Area (AQMA).

BCBC note that potential impacts on air quality are likely to be most significant during construction and decommissioning phases. Bridgend County Borough Council (BCBC) also note that the potential use of borrow pits¹ would need to be considered. There is the potential for the scheme to impact air quality at existing residential properties, particularly the Neath Port Talbot AQMA, as well as nearby sensitive designated ecological habitats. Due to the uncertainty on the levels of vehicle movements provided in the Scoping Report for the construction and decommissioning phases, and the scale of the project, BCBC state that air quality cannot be scoped out at this stage. Further information is required on the volumes of construction traffic, including AIL movements, in order to inform an assessment that as to whether air quality can be scoped out. This assessment should be included in the ES.'

1.1.3 This assessment aims to satisfy the Scoping Direction request to consider the transport related air quality effects of the Proposed Development as part of the ES and demonstrate a full ES chapter is not required.

1.1.4 The Proposed Development is located across an approximately 578 ha area of elevated land to the northwest of Bridgend and approximately 7 km from the Welsh coast (hereinafter referred to as the 'Site'). The Site comprises rough grassland and agricultural land with hedgerows, scattered trees and patches of woodland. The Site is located within the administrative boundaries of BCBC and Neath Port Talbot Council (NPTC).

1.1.5 The following report presents the findings of a desk-based review of the existing baseline air quality conditions and potential road traffic effects upon local air quality arising from the Proposed Development during the construction, operation and decommissioning phases.

¹ It should be noted that the Proposed Development no longer includes borrow pits and it has been assumed that material would be exported to the Site.

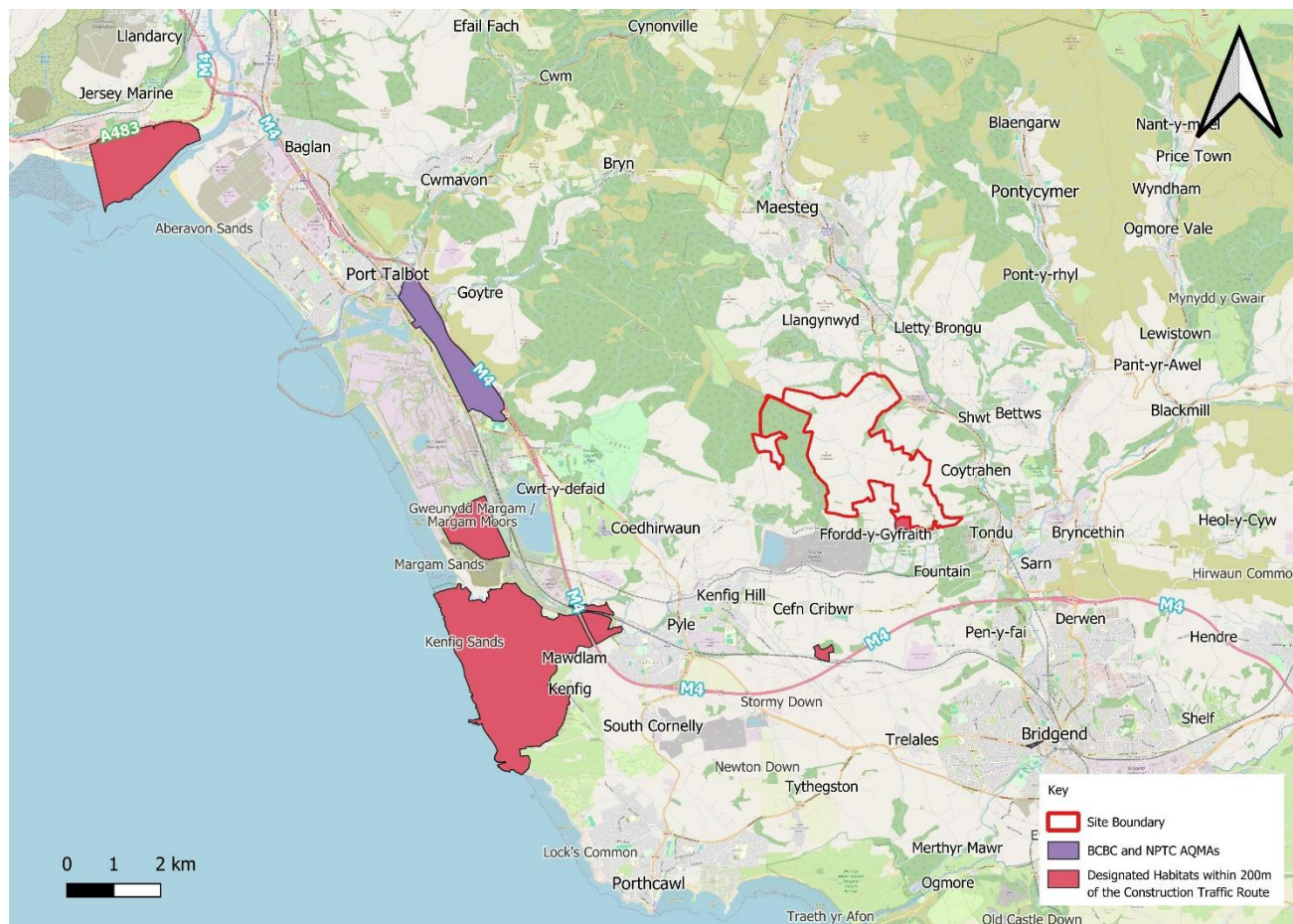


Figure 1.1: Proposed Development Site Location

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Galileo 03 Ltd.

Mynydd Ty-talwyn Energy Park Environmental Statement, Volume III

663870

2 LEGISLATION, PLANNING POLICY & GUIDANCE

2.1 Key Legislation

Air Quality Strategy

- 2.1.1 UK air quality policy is published under the umbrella of the Environment Act 1995, Part IV and specifically Section 80, the National Air Quality Strategy. The latest *Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working Together for Clean Air*, published in July 2007 sets air quality standards and objectives for ten key air pollutants to be achieved between 2003 and 2020. It furthermore describes the role of local authorities in carrying out their duties under the Environment Act 1995 (i.e. the Local Air Quality Management (LAQM) regime). The latest 2023 *air quality strategy: Air quality Strategy: framework for local authority delivery*, does not apply to Wales and replaces the 2007 strategy in England only.

The Clean Air Strategy 2019

- 2.1.2 The Clean Air Strategy 2019 sets out ways that the UK government will seek to tackle major sources of pollution. This latest strategy aims to have a more joined-up approach, outlining actions the Government plans to take to reduce emissions from transport, homes, agriculture and industry.

Air Quality Regulations

- 2.1.3 The Air Quality Standards (AQSs) in the United Kingdom are derived from EC directives and are adopted into Welsh law via the Air Quality Standards Regulations (Wales) (2010). Directive 2008/50/EC set limit values, and was translated into Welsh law in 2010 via the Air Quality Standards Regulations (Wales) 2010. The European Union (Withdrawal) Act retains existing EU environmental provisions in the UK.
- 2.1.4 The Air Quality Standards Regulations (Wales) 2010 establish standards for ambient air quality in Wales to protect health and the environment from the adverse effects of air pollution. The relevant² standards for Wales to protect human health are summarised in Table 2.1.

Table 2.1: Air Quality Standards (AQS) Relevant to the Proposed Development

Substance	Averaging period	Exceedances allowed per year	Ground level concentration limit (µg/m ³)
Nitrogen dioxide (NO ₂)	1 calendar year	-	40
	1 hour	18	200
Fine particles (PM ₁₀)	1 calendar year	-	40
	24 hours	35	50
Fine particles (PM _{2.5})	1 calendar year	-	20

² Relevance, in this case, is defined by the scope of the assessment.

The Environment Act, 2021

- 2.1.5 The Environment Act provides a mechanism to set long-term, legally binding environmental targets, including those for air pollution. The Act requires the UK government to have an Environmental Improvement Plan (EIP) covering at least 15 years and setting out steps it intends to take to improve the environment.

Environment (Air Quality and Soundscape Act), 2024

- 2.1.6 The 2024 Environment (Air Quality and Soundscape Act) (Wales) “*seeks to improve the quality of our air environment and reduce the impacts of airborne pollution on human health, nature, the environment and our economy.*” It creates a legal framework to set targets in relation to air quality and “*places the Welsh Ministers and local authorities under a duty to promote active travel as a way of reducing or limiting air pollution*”. As part of this act, Welsh Ministers must set a target in respect of the annual mean level of PM_{2.5}.

Well-being of Future Generations (Wales) Act 2015

- 2.1.7 The Well-being of Future Generations (Wales) Act sets out to improve lives now and for future generations by setting and publishing objectives focusing on seven well-being goals. In order to measure the performance of the actions for each goal, a series of indicators have been set. Air quality is a performance indicator for four of the seven well-being goals.

Clean Air Plan for Wales 2020

- 2.1.8 The Clean Air Plan for Wales sets out to implement actions across the Welsh government and sector to reduce air pollution concentrations. The plans look at reducing emission from road traffic, agriculture and industry, through promoting active travel, clean air zones and actions on Best Available Techniques (BAT).

2.2 Planning Policy

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

National Planning Policy

- 2.2.2 Planning Policy Wales (PPW) (Edition 12) (Welsh Government, 2024) details the land use planning policies of the Welsh Government, with the objective to ensure the delivery of sustainable development. .
- 2.2.3 Section 6.7 of the PPW, Air Quality and Soundscapes, states: “*In taking forward these broad objectives the key planning policy principle is to consider the effects which proposed developments may have on air or soundscape quality and the effects which existing air or soundscape quality may have on proposed developments. Air Quality and soundscape influence choice of location and distribution of development and it will be important to consider the relationship of proposed development to existing development and its surrounding area and its potential to exacerbate or create poor air quality or inappropriate soundscapes*”

....in proposing new development, planning authorities and developers must, therefore:

- address any implication arising as a result of its association with, or location within, air quality management areas, noise action planning priority areas or areas where there are sensitive receptors*
- not create areas of poor air quality or inappropriate soundscape; and*
- seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes....*

.....To assist decision making it will be important that the most appropriate level of information is provided and it may be necessary for a technical air quality and noise assessment to be undertaken by a suitably qualified and competent person on behalf of the developer”

- 2.2.4 Furthermore, Future Wales: The National Plan 2040, the Welsh plan to promote development that enhances Welsh well-being and Welsh quality of life, states:

“When proposing new transport infrastructure or new development, average population exposure to air and noise pollution should be reduced and soundscapes improved where it is practical and feasible to do so. At the very least, exposure to pollution should be minimised. This will include taking into account the long-term effects of current and predicted levels of air and noise pollution on individuals, society and the environment arising as a result of proposals for transport infrastructure or development.”

- 2.2.5 Furthermore Policy 18 of the Future Wales: The National Plan 2040 - Renewable and Low Carbon Energy Developments of National Significance, states:

“Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:

... there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;.....

.... there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;”

Local Planning Policy

- 2.2.6 BCBC Replacement Local Development Plan (LDP) 2018-2033 contains relevant policies in respect of air quality / pollution, namely:

- SP8: Health and Well-being;
- SP13 – Renewable and Low Carbon Energy Development;
- SP17 – Conservation and Enhancement of the Natural Environment; and
- DNP9 – Natural Resource Protection and Public Health.

- 2.2.7 SP8 – Health and Well-being states:

“Health inequalities will be reduced and healthy lifestyles and choices encouraged by ensuring that development proposals:..... Protect (and where possible enhance) safety, security and resilience and do not result in significant risk to life, human health or well-being, particularly in respect of air, noise, light, water or land pollution.”

- 2.2.8 SP13 – Renewable and Low Carbon Energy Development states the following:
“1) Renewable and low carbon development proposals which contribute to meeting national and local renewable and low carbon energy and energy efficiency targets will be permitted where:
 a) *It can be demonstrated that there will be no unacceptable impacts on the natural and historic environment or local communities (such as noise and air pollution) and that no other unacceptable cumulative impacts will arise;...”*
- 2.2.9 SP17 – Conservation and Enhancement of the Natural Environment states the following:
“The County Borough has a rich and varied biodiversity with a broad range of species, habitats and unique, rich landscapes. In particular, these include the nationally important Glamorgan Heritage Coast, the outstanding historic landscapes of Kenfig and Merthyr Mawr Warren, and other regionally and locally important areas. Development which will maintain and, wherever possible, enhance the natural environment of the County Borough will be favoured. Development proposals will not be permitted where they will have an adverse impact upon:
 1) *The integrity of the County Borough’s countryside;*
 2) *The character of its landscape;*
 3) *Its biodiversity and habitats; and*
 4) *The quality of its natural resources including water, air and soil.....”*
- 2.2.10 DNP9 – Natural Resource Protection and Public Health states the following:
“Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to health, biodiversity and/or local amenity due to:
 1) *Air pollution;.....*
- 2.2.11 NPTC Local Development Plan (LDP) contains relevant policies in respect of air quality / pollution, namely:
- Strategic Policy SP16 – Environmental Protection; and
 - Policy EN8 – Pollution and Land Stability.
- 2.2.12 Strategic Policy SP16 – Environmental Protection states the following:
" Air, water and ground quality and the environment generally will be protected and where feasible improved through the following measures:
 1. *Ensuring that proposals have no significant adverse effects on water, ground or air quality and do not significantly increase pollution levels;*
 2. *Giving preference to the development of brownfield sites over greenfield sites where appropriate and deliverable;*
 3. *Ensuring that developments do not increase the number of people exposed to significant levels of pollution.”*
- 2.2.13 Policy EN8 – Pollution and Land Stability states the following:
"Proposals which would be likely to have an unacceptable adverse effect on health, biodiversity and/or local amenity or would expose people to unacceptable risk due to the following will not be permitted:

- Air pollution;
- Noise pollution;
- Light pollution;
- Contamination;
- Land instability;
- Water (including groundwater) pollution.

Proposals which would create new problems or exacerbate existing problems detailed above will not be acceptable unless mitigation measures are included to reduce the risk of harm to public health, biodiversity and/or local amenity to an acceptable level.”

2.3 Best Practice Guidance Documents

Local Air Quality Management Review and Assessment Technical Guidance

- 2.3.1 The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities in their air quality review and assessment work. This technical guidance has been produced in partnership with the Welsh Government (and other devolved administrations). This guidance is referred to in this report as the Local Air Quality Management Technical Guidance (Defra, 2016) ('LAQM TG.22').

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

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

A guide to the assessment of air quality impacts on designated nature conservation sites

- 2.3.4 The IAQM has published guidance for the assessment of the air quality impacts of developments on designated nature conservation sites. This document focuses on air quality assessments in support of HRA but can be applied to national or local designated nature conservation sites. This document provides both screening criteria and full methods of air quality assessment on designated habitats.

3 ASSESSMENT SCOPE

3.1 Overall Approach

- 3.1.1 The operation of vehicles powered by internal combustion engines results in the emission of exhaust gases. The main pollutants being NO₂, PM₁₀, and PM_{2.5}. The quantities emitted depend on factors such as engine type, service history, pattern of usage and fuel composition.
- 3.1.2 The approach taken for assessing the potential road traffic air quality impacts associated with the Proposed Development may be summarised as follows:
- Baseline characterisation of local air quality using data from local air quality monitoring programme (by BCBC and NPTC);
 - Qualitative assessment of construction, operational and decommissioning road traffic impacts, and discussion of the likely effects of the Proposed Development on human receptors and designated habitats; and
 - Consideration of mitigation measures, where appropriate.
- 3.1.3 Internationally, nationally and locally designated sites of ecological conservation importance for the protection of species, habitats and other species identified as being of principal importance for the conservation of biodiversity (known as designated habitats) within 200 m of the affected road network have been included in the air quality assessment, as recommended by IAQM and Natural England guidance.
- 3.1.4 A review of the Natural Resources Wales website³ indicates that Cwm Risca Meadow Site of Special Scientific Interest (SSSI) is located adjacent to the southern boundary of the Site; therefore, potential road traffic exhaust impacts on designated habitats have been considered in this assessment. Other designated habitats along the proposed construction route have also been considered in relation to the movement of Abnormal Indivisible Loads (AIL) and, as far as reasonably practicable, the Proposed Development traffic.

³ <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en>

4 BASELINE AIR QUALITY CHARACTERISATION

4.1 Presence of AQMAs

- 4.1.1 BCBC has declared one AQMA, Park Street Bridgend AQMA, due to exceedances of the annual mean NO₂ air quality standard. The AQMA is located approximately 6.9 km southeast of the Site and has been declared mainly for the exceedances at receptors close to the road along a heavily trafficked and congested route. As such, this is a localised issue and not necessarily reflective of air quality conditions within the wider Bridgend area.
- 4.1.2 NPTC has declared one AQMA, Neath Port Talbot AQMA, due to exceedances of the 24-hour mean PM₁₀ air quality standard. Neath Port Talbot AQMA (Taibach/Margam), an area covering the majority of land and properties between the Steel Works and the M4, is located approximately 7.6 km northwest of the Site. This AQMA has mainly been declared due to PM₁₀ emissions and is primarily associated with emissions from the Steel Works. NPTC's latest available Air Quality Progress Report (Neath Port Talbot Council, 2024) notes that monitoring in the area of the Steel Works has shown compliance with the air quality objectives in recent years. However, the frequency of daily average spikes in pollution concentrations have increased at some sites, and although these are still within regulatory limits, revoking the AQMA is not currently being considered.

4.2 Baseline Monitoring Data

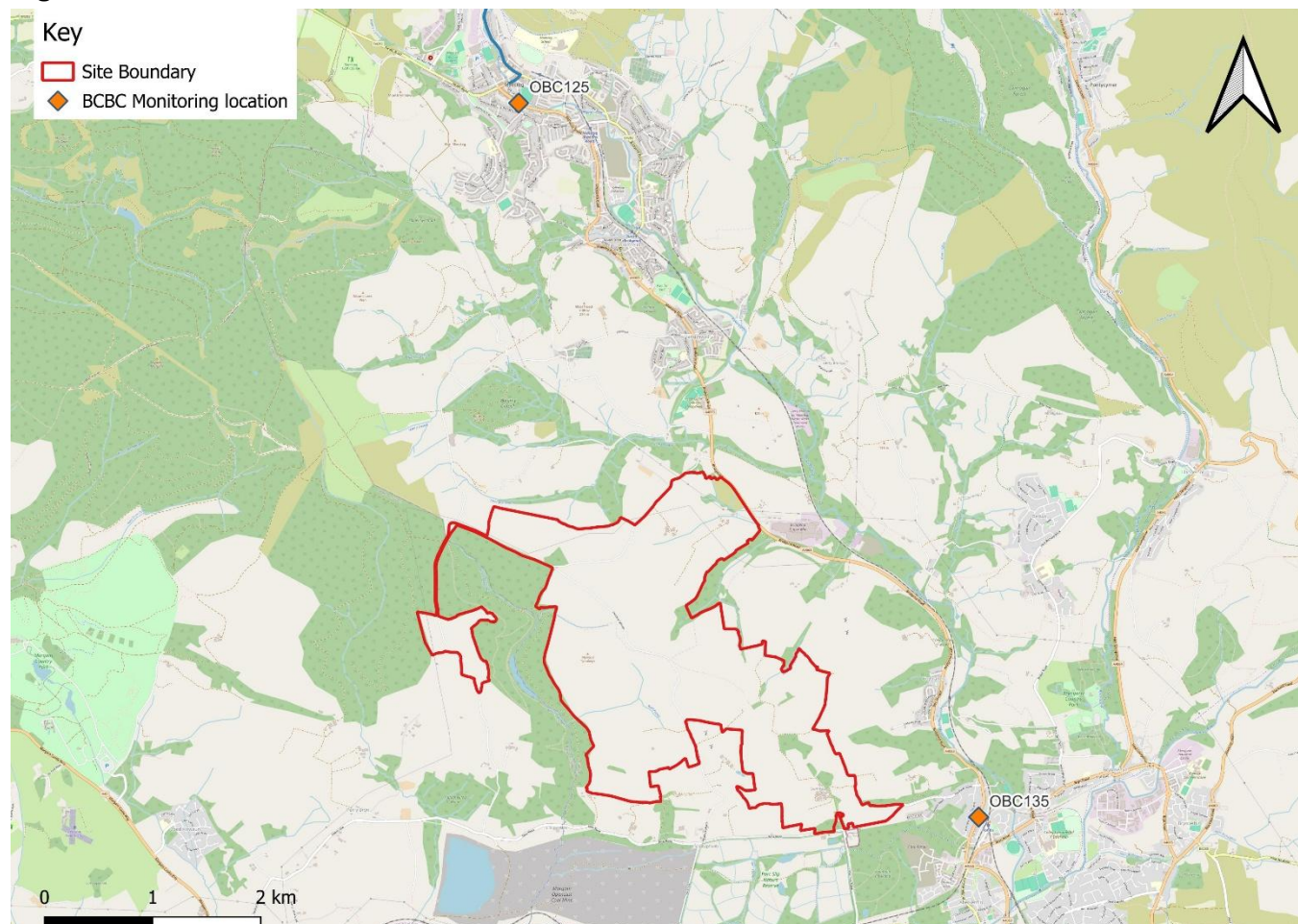
Bridgend Council

- 4.2.1 According to the 2024 BCBC Air Quality Annual Status Report (the latest available online), there was one automatic monitoring station and 35 NO₂ diffusion tube monitoring locations around the borough in 2023.
- 4.2.2 The closest monitoring location to the Site is a diffusion tube (BCBC ref: OBC-135) positioned on Maesteg Road, approximately 3.2 km from the Site. The measured annual average NO₂ concentrations at this diffusion tube site for the years 2019-2023 are presented in **Table 4.1**. There was no exceedances of the annual NO₂ AQS during 2019-2023. **Figure 4.1** demonstrates the location of diffusion tubes OBC-125 and OBC-135 in relation to the Proposed Development.
- 4.2.3 Particulate matter monitoring data is not available in the vicinity (within 3 km) of the Site, and such, is not representative exposure of residents along the construction or operations traffic routes in Bridgend.

Table 4.1 Annual Mean NO₂ Concentrations Measured at Diffusion Tubes Near the Construction Route

Site ID	Location	Site type	Approximate Distance from Site (km)	Annual Mean NO ₂ Concentrations (µg/m ³)				
				2019	2020	2021	2022	2023
OBC-135	33 Maesteg Rd, Tondur	Roadside	3.2	-	-	17.8	21.5	21.7
OBC-125	Commercial Road, Maesteg	Roadside	4.0	18.8	19.3	9.8	14.5	20.8
Air Quality Standard				40				

Figure 4.1 Location of Diffusion Tube OBC-125 and OBC-135



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Neath Port Talbot Council

- 4.2.4 Based on the NPTC's 2024 Air Quality Annual Status Report (the latest available online), there were five automatic monitoring locations and 26 NO₂ diffusion tube monitoring locations around the borough in 2023. However, with the focus of NPTC's air quality monitoring being on industrial emissions, there is no representative monitoring for NO₂ near the M4 (the proposed construction route within NPTC's jurisdiction).
- 4.2.5 Table 4.2 details the results of all pollutants monitored at the industrial Automatic Urban and Rural Network (AURN) (ID: PT2) site in Port Talbot, which indicates no exceedances of any air quality objectives. This is also the same for all other automatic monitoring sites in the town, with the exception of the 24-hour PM₁₀ objective, which was exceeded at monitoring site Prince Street in 2023 (within the Port Talbot AQMA).

Table 4.2 Monitoring data for Relevant Pollutants at the AURN Site (ID: PT2) in Port Talbot

Pollutant	Standard	Air Quality Standards (µg/m ³)	Concentrations (µg/m ³)				
			2019	2020	2021	2022	2023
NO ₂	Annual Mean Objective	40	15	12	13	12	11
	1-hour Mean Objective	200 (18 allowable exceedances)	0 ¹	0 ¹	0 ¹	0 ¹	0 ¹
PM ₁₀	Annual Mean Objective	40	21	21	25	26	27
	24-hour Mean Objective	50 (35 allowable exceedances)	12 ¹	11 ¹	33 ¹	23 ¹	31 ¹
PM _{2.5}	Annual Mean Objective	20	11	11	9	8	8

Note 1 – Number of exceedances of the objective concentration

- 4.2.6 Furthermore, modelled Pollution Climate Mapping (PCM) roadside concentrations are provided by Defra for major roads across the UK. These indicate no roadside exceedances near the M4 in Port Talbot during 2023. The data available has been represented graphically in **Figure 4.2**.



Figure 4.2 NO₂ Annual Mean PCM data for the M4 in Port Talbot for 2023

Imagery @2025 Airbus, Maxar Technologies Map data @2025

4.3 Designated Habitats

- 4.3.1 There are a number of designated habitats within the vicinity of the Site and within 200 m of the proposed construction route. These are set out in **Table 4.3** and **Figure 1.1**.

Table 4.3 Designated Nature Conservation Sites along the route

Designated Site	Approximate distance and direction from the route or Site
Cwm Risa Meadow Site of Special Scientific Interest (SSSI)	Immediately to the south of the Site
Cynffig / Kenfig SSSI	Adjacent to, or under the route where the M4 is raised
Cynffig / Kenfig Special Area of Conservation (SAC)	Adjacent to the west of the route
Crymlyn Burrows SSSI	Adjacent to the south of the route
Kenfig Pool and Dunes National Nature Reserve (NNR) and Local Nature Reserve (LNR)	15 m west of the route
Crymlyn Bog RAMSAR	30 m north of the route
Cors Crymlyn / Crymlyn Bog SSSI and SAC	30 m north of the route
Eglwys Nunydd Reservoir SSSI	55 m west of the route
Waun-fawr, Cefn Cribwr SSSI	140 m north west of the route
Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC	140 m north west of the route

- 4.3.2 Earlswood Road Cutting and Ferryboat Inn Quarries SSSI and Stormy Down SSSI are also present along the proposed route from the port; however, these are designated for geological reasons and have therefore not been included in this assessment.

5 QUALITATIVE SCREENING ASSESSMENT OF ROAD TRAFFIC IMPACTS

5.1 Screening Criteria

- 5.1.1 **Table 5.1** presents the EPUK-IAQM guidance's screening criteria (Moorcroft and Barrowcliffe. *et al.* (2017)) for when an air quality assessment might be required. Should the criteria within **Table 5.1** be exceeded then a detailed assessment of impacts may be required. The guidance makes it clear that exceeding a screening criterion does not automatically lead to the requirement for a Detailed Assessment. The guidance highlights that any assessment should provide enough evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality.

Table 5.1 Air Quality Screening Criteria from EPUK-IAQM Guidance

Criteria	Indicative criteria to proceed to an air quality assessment
Cause a significant change in Light Duty Vehicle traffic flows on local roads with relevant receptors	A change of Light Duty Vehicle (LDV) flows of: - more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area - more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle flows on local roads with relevant receptors	A change of Heavy Duty Vehicle (HDV) flows of: - more than 25 AADT within or adjacent to an Air Quality Management Area - more than 100 AADT anywhere else.

5.2 Construction and Decommissioning Phases

- 5.2.1 Construction (and decommissioning) traffic will comprise haulage/construction vehicles and vehicles used for workers' trips to and from the Site. Construction phase traffic data has been obtained from the Project Transport team and is provided in **Table 5.2**.
- 5.2.2 **Figure 5.1** shows the road links included in the traffic assessment in relation to the Site.

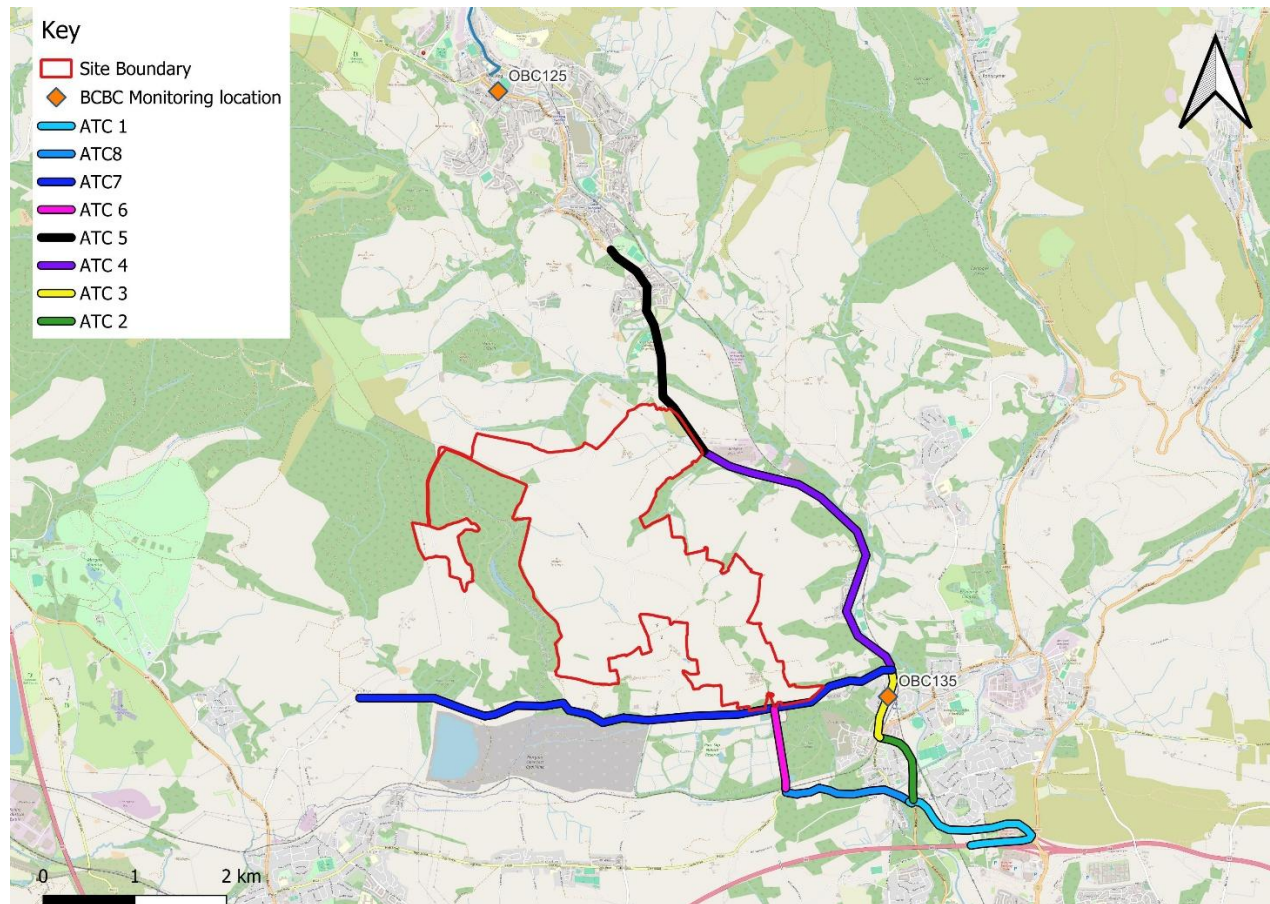
Table 5.2 Construction phase traffic data

Road Links	Road Name	LDVs in AADT	HDVs in AADT
ATC 1	A4063 between B4281 and M4	81	102
ATC 2	A4063 between Bryn Road and B4281	90	102

Road Links	Road Name	LDVs in AADT	HDVs in AADT
ATC 3	A4063 (Maesteg Road) between Derllwyn Road and Bryn Road	90	102
ATC 4	A4063 south of site access to Derllwyn Road	90	102
ATC 5	A4063 north of site access to Llangynwyd	90	96
ATC 6	Fountain Road between between New Road and Tycribwr Hill	0 ¹	6 ¹
ATC 7	New Road between Fountain Road and A4063	0 ¹	6 ¹
ATC 8	B4281 between Tycribwr Hill and A4063	0 ¹	6 ¹

Note 1 – In addition, the Abnormal Indivisible Loads (AIL) will use this route. Based on there only being 12 AIL trips and 12 HDV trips per year, this averages to zero AADT.

Figure 5.1 Construction Traffic Road Links Included in the Traffic Assessment



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Impacts on Human Receptors

- 5.2.3 Based on the traffic data provided by the project transport consultant, the Proposed Development is not predicted to generate Light Duty Vehicles (LDV) movements that exceed the EPUK-IAQM screening criteria outside an AQMA (i.e. a change of LDV flows of more than 500 AADT) during the construction phase. However, the predicted construction phase Heavy Duty Vehicle (HDV) traffic is anticipated to slightly exceed the EPUK-IAQM screening criteria for outside an AQMA (i.e. a change of HDV flows of more than 100 AADT) on four links.
- 5.2.4 While there is the potential for HDV trips to slightly exceed the above screening criteria (102 AADT), a review of the baseline conditions in Section 4 of this Report indicates local roadside concentrations are well below the air quality objectives. Therefore, when considering the baseline and the trips only slightly exceeding the screening criteria, the effects at human receptors due to construction trips outside an AQMA are judged to be not significant.
- 5.2.5 It is not anticipated that the construction traffic will pass through the Bridgend AQMA. Therefore, significant effects on receptors within this AQMA are not anticipated.
- 5.2.6 The number of trips going through the Port Talbot AQMA are not known as this is out of the detailed transport study area; however, the maximum AADT would be 90 LDV and 102 HDV (as shown in **Table 5.2**). This does not account for the likely distribution of these trips across the network (i.e. that vehicles could travel either east or west along the M4 after joining from the Site at Junction 36 or that vehicles could leave the M4 prior to Port Talbot at Junction 37). As significant quantities of raw materials are anticipated to come from Cornelly Quarry, 17.5 km away from the Site, it is unlikely that all these trips will pass through the Port Talbot AQMA. Furthermore, while the available traffic data indicates the potential for exceedances of the EPUK-IAQM screening criteria, with the exception of the 24-hour PM₁₀ standard, available automatic monitoring in Port Talbot recorded concentrations well below 90% of any air quality standard in 2023 and, as such, EPUK-IAQM guidance suggests the less stringent criteria are likely to be more appropriate. When considering the likely distribution of the trips to the Port Talbot AQMA and road traffic not being the dominate source of elevated 24-hour PM₁₀ concentrations, the likelihood of significant effects at receptors in the Port Talbot AQMA due to construction traffic is judged to be low.

AIL Route Consideration

- 5.2.7 Assuming all AIL deliveries during the peak month of construction will occur on the same day (worst-case), there will be 12 HDV AIL movements passing through the Port Talbot AQMA. The Proposed Development is therefore not predicted to generate AIL HDV movements exceeding the EPUK-IAQM 2017 screening criteria (i.e. a change of HDV flows of more than 25 AADT within or adjacent to an AQMA) during the construction phase. Therefore, it is considered unlikely that the additional construction phase emissions as a result of the AIL deliveries will cause a significant adverse effect on local air quality at any human receptors along the route.

Impacts on Designated Habitats

- 5.2.8 The Proposed Development construction traffic is predicted to pass within 200 m of the designated habitats listed in **Table 4.3**. As such, based on 'Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations guidance' and IAQM's 2020 'A guide to the

assessment of air quality impacts on designated nature conservation sites' guidance, an assessment of the impacts from the construction traffic is required.

- 5.2.9 Natural England's guidance⁴ suggests the use of the 1,000 and 200 AADT thresholds for LDVs and HDVs, respectively. However, these screening criteria for effects on designated habitats are only considered suitable if the vehicle trips from in-combination developments are included with the Proposed Development's trips⁵.
- 5.2.10 With respect to the construction trips travelling past the designated habitats near the M4, the trip generation is unknown, with only the 12 AIL HDV trips known. The maximum AADT for non-AIL movements, assuming all vehicles from link ATC 1 would travel along the westbound carriageway of the M4, would be 81 LDV and 102 HDV.
- 5.2.11 However, it is not judged suitable for these trips to be considered in this case; due to the M4 being part of the national transport network, with any number of proposed schemes using this route. This is supported by JNCC 2021 Guidance on Decision-making Thresholds for Air Pollution⁶, which states:
"When undertaking a project level HRA to consider the effects of an individual development proposal on traffic related emissions on the existing road network, strategic 'trunk roads' should be excluded from the scope of the assessment. The trunk road network forms the core of the national transport system. Trunk roads are central to long distance travel and connectivity across the UK and traffic patterns on trunk roads are a consequence of predicted growth across the UK generally."
- 5.2.12 Furthermore, only 6 AADT construction traffic trips will pass by the Cwm Risca Meadow SSSI on the road network. The Proposed Development's construction trips are therefore considered not significant at the Cwm Risca Meadow SSSI.
- 5.2.13 There will be internal site traffic trips within 200 m of the Cwm Risca Meadow SSSI; however, as long as internal haul routes are designed to avoid the SSSI, so nearby trips are kept to a minimum (when working on the adjacent areas of the SSSI), significant effects are unlikely. This also applies to Non-Road Mobile Machinery (NNRM), and where their use near the SSSI would be kept to a minimum.

Summary

- 5.2.14 Vehicle trips associated with the construction phase of the Proposed Development at both human receptors and designated habitats either are below relevant industry screening thresholds or are judged to be not significant when considering local baseline data. As such the effects from construction traffic are judged to be not significant.

5.3 Operational (including maintenance) Phase

- 5.3.1 Given the nature of the Proposed Development, once operational, there will be limited movement of vehicles to the site. Regular monthly or weekly visits would be made to the site for maintenance checks. The vehicles used are likely to be 4x4 vehicles, and

⁴ <https://publications.naturalengland.org.uk/publication/4720542048845824>

⁵ While both guidance's apply in-combination effects to European designated sites, it has been considered with respect to SSSIs.

⁶ <https://data.jncc.gov.uk/data/6cce4f2e-e481-4ec2-b369-2b4026c88447/JNCC-Report-696-Main-FINAL-WEB.pdf>

there may also be the occasional need for an HGV to access the site for maintenance and/or repairs.

- 5.3.2 In addition to the regular maintenance visits described above, there would be occurrences where it is anticipated that solar infrastructure may need to be replaced. As set out in **ES Volume II, Chapter 12: Traffic and Movement**, it is anticipated that the volume of traffic would be equivalent to 25% of construction traffic required for the delivery of: panels, inverters, frames, piles and transformers.
- 5.3.3 Consequently, the Proposed Development is not expected to generate traffic exceeding the EPUK-IAQM 2017 screening criteria once operational. The increased road traffic emissions from the Proposed Development are expected to have a negligible impact on air quality during the operational phase. Therefore, the effects of road traffic emissions during the operational phase without mitigation measures are considered to be not significant, and further assessment of the operational phase traffic emissions is considered to not be required.

5.4 Decommissioning Phase

- 5.4.1 Traffic generation during the decommissioning phase would be less than the construction phase. Therefore, with roadside pollutant concentration expected to reduce in the future with the increased uptake of low-emissions technologies, it is considered that the decommissioning phase traffic emissions will not lead to effects greater than described in Section 5.2 and, therefore, are considered not significant.

6 MITIGATION MEASURES & RESIDUAL IMPACTS

- 6.1.1 While it is noted that no significant air quality effects are anticipated as a result of the construction traffic associated with the Proposed Development, other technical assessments in the ES have demonstrated the need for mitigation measures. Where these measures are also applicable to air quality, these have been set out in this section.

6.2 Construction and Decommissioning Phases

- 6.2.1 An Outline Construction Traffic Management Plan (OCTMP) has been prepared for the Proposed Development and is provided in **ES Volume III, Appendix 12.1 Outline Construction Traffic Management Plan**. This will be worked into a detailed CTMP upon appointment of the Principal Contractor. The traffic effects of the Proposed Development during the construction and decommissioning phases will be temporary (i.e. during the construction/decommissioning period only) and can be suitably controlled by the employment of mitigation measures documented within the CTMP. Consequently, any reduction in construction (and decommissioning) vehicle trips would also reduce the likely air quality effects.
- 6.2.2 Measures documented within the OCTMP are also applicable to the decommissioning phase.

6.3 Operational Phase

- 6.3.1 The assessment predicts that the operational phase road traffic emissions will not have a significant effect on local air quality. Therefore, no specific operational phase mitigation measures are required.

7 SUMMARY AND CONCLUSIONS

- 7.1.1 An air quality assessment has been prepared for the proposed Mynydd Ty-talwyn Energy Park in line with the Scoping Direction issued by PEDW. This assessment has been undertaken with reference to existing air quality in the area and relevant air quality legislation, policy and guidance.
- 7.1.2 A qualitative impact assessment has been undertaken to assess the road traffic impacts from the Proposed Development on air quality during the construction, operation and decommissioning phases. Based on this assessment, it is anticipated that the Proposed Development will not have a significant adverse effect on human receptors or designated habitats in the vicinity of the construction, operation or decommissioning routes.
- 7.1.3 An Outline Construction Traffic Management Plan has been prepared for the Proposed Development and measures documented are also applicable to the decommissioning phase. No specific operational phase mitigation measures are considered required.
- 7.1.4 As set out in this report, significant effects on local air quality or designated habitats are not anticipated during any phase of the Proposed Development. Furthermore, the implementation of the CTMP would reduce the likely effects. As such, it is considered that further assessment of the road traffic emissions is not required, and air quality traffic effects are not likely to be significant and can be scoped out of the Environmental Statement.

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