



Galileo 03 Ltd.

Mynydd Ty-talwyn Energy Park - Environmental Statement Volume II

Main Written Statement – Chapter 5: Land, Soil and Groundwater

Project Reference: 663870

This chapter is summarised within the Non-Technical Summary of this Environmental Statement. A Welsh translation of the Non-Technical Summary is also available as part of the application.

Crynoir y bennod hon yng Nghrynodeb Annhechnegol y Datganiad Amgylcheddol hwn. Mae cyfieithiad Cymraeg o'r Crynodeb Annhechnegol hefyd ar gael fel rhan o'r cais.

NOVEMBER 2025

RSK

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5 LAND, SOIL AND GROUNDWATER

5.1 Introduction

- 5.1.1 This chapter presents an assessment of likely significant effects arising from the construction, operation and decommissioning of the Proposed Development upon land, soil and groundwater receptors.
- 5.1.2 This chapter is supported by the following appendices presented in **Environmental Statement (ES) Volume III**:
- **Appendix 2.1: Outline Construction Environmental Management Plan;**
 - **Appendix 5.1: Preliminary Risk Assessment (PRA);**
 - **Appendix 5.2: Coal Mining Risk Assessment (CMRA);**
 - **Appendix 5.3: Depth of Penetration Survey Report;**
 - **Appendix 5.4: Outline Soil Management Plan, and**
 - **Appendix 5.5: Natural Resources Wales Meeting Notes (August 2025).**
- 5.1.3 This chapter is supported by the following figures presented in **ES Volume IV**:
- **Figure 5.1: Study area for Land, Soil, and Groundwater;**
 - **Figure 5.2: Location of Sensitive Receptors Relating to Land, Soil and Groundwater;**
 - **Figure 5.3: Gradients of Slopes;**
 - **Figure 5.4: Mine Entry Locations and Distances to Development Features; and**
 - **Figure 5.5: Other Coal Mining Constraints.**

5.2 Consultation and Scope

Scoping Direction

- 5.2.1 The scope of this assessment has been established through an ongoing scoping process. This has involved the production of an EIA Scoping Report (provided in **ES Volume III, Appendix 1.1: EIA Scoping Report**), which was submitted to Planning and Environment Division Wales (PEDW) on 27 November 2023. Further information on the scoping process can be found in **ES Volume II, Chapter 4: Approach to the EIA**.
- 5.2.2 The Scoping Direction, a copy of which is included in **ES Volume III, Appendix 1.2: Scoping Direction**, was received on 11 April 2024. **Table 5.1** summarises the key Scoping Direction comments related to this assessment, and sets out how these have been addressed.

Table 5.1 Summary of Scoping Direction Comments Relevant to this Land, Soil and Groundwater Assessment

ID no.	Issue	Comment raised	Applicant response
41	Study Area and Baseline Characterisation	Bridgend County Borough Council (BCBC) advises that the study area and baseline characterisation appear satisfactory at this phase. However, as the design of the scheme progresses and specialist consultees are engaged in the process, these matters may need to be altered / increased.	Consideration has been given to the suitability of the study area throughout the production of the assessment reported in this ES. It is considered by the Applicant that a study area of 1 km beyond the extent of the Site boundary remains appropriate to identify the likely significant effects of the Proposed Development, and that study area size has been used within this assessment.
42	Groundwater	The Scoping Report proposed to scope out groundwater. PEDW has required that groundwater is scoped in to the ES and considered as a receptor in its own right. Natural Resources Wales (NRW) has requested assessment of the quantity and quality of groundwater (Also see Table 6.1, ES Volume II, Chapter 6: Water).	An assessment of groundwater is scoped into the assessment reported in this ES, the results of which are provided within this chapter.
43	Land Contamination	It was proposed to scope in land contamination for the construction phase. NRW and PEDW required that land contamination should also be scoped in for decommissioning. It was also noted that water quality and water resource / quantity should be considered with regard to contamination.	Land contamination is scoped in and has been assessed for the construction and decommissioning phases of the Proposed Development. Water quality and water resource/quantity have been assessed within ES Volume II, Chapter 6: Water . This includes consideration of potential effects from contamination.

ID no.	Issue	Comment raised	Applicant response
		The Contaminated Land Officer at Neath Port Talbot Council (NPTC) advised that a desk-top assessment of standard ground contamination and mine gas risk assessments should be undertaken. NRW notes that the findings in the PRA should be confirmed via appropriate site investigation. If the need for remediation is identified, a Remediation Strategy should be provided or secured via condition. PEDW advises the PRA and site investigation should be included as a technical appendix to the ES. NRW further recommends that the applicant should: • Follow the risk management framework provided in Land Contamination Risk Management (Environment Agency, 2025); • Refer to Land Contamination: a guide for developers (The Welsh Local Government Association, 2017). The Local Authority can advise on risk to other receptors, such as human health; and • Refer to NRW's groundwater protection advice (Environment Agency, 2024) (Environment Agency, 2018).	A Preliminary Risk Assessment has been completed and is presented in ES Volume III, Appendix 5.1: Preliminary Risk Assessment. This considers existing and potential sources of contamination within the Site alongside ground and mine gas risks. A Coal Mining Risk Assessment has been completed, and is presented in ES Volume III, Appendix 5.2: Coal Mining Risk Assessment. These documents both include recommendations for intrusive site investigation phases of work, which are proposed to be completed under condition, and reported to the local authority and Mining Remediation Authority (MRA, formerly known as the Coal Authority). If remediation is required, the scope of this and any necessary verification will also be agreed with the statutory consultees. Intrusive geoenvironmental and geotechnical site investigation has not been undertaken at the time of the ES being submitted; however, it is considered that the baseline information obtained to inform this assessment is sufficient to fully assess the likely effect of the Proposed Development for the purpose of EIA. The work undertaken follows the Land Contamination Risk Management methodology and has regard to the 'Land Contamination: a guide for developers' document.

ID no.	Issue	Comment raised	Applicant response
			The documents referred to have been considered in the completion of this assessment.
		NRW further notes that the long and short term positive versus negative impacts have not been considered over the 50-year lifespan of the development. NRW recommends that the positive impacts of remediation associated with soils and water is considered in the ES if contamination is found to be present at the Site.	The assessment has considered the temporal aspects of the Proposed Development and also whether there are potential beneficial impacts on land and groundwater, should contamination be encountered and remediated during the construction of the Proposed Development.
44	Mining and stability	NRW notes that the risks associated with land mining and stability should be scoped in as site investigation information is currently unavailable. It is required that these issues should be scoped in for the construction and decommissioning phases. The CMRA should be provided as a technical appendix to the ES.	These elements have been scoped in for both the construction and decommissioning phase assessments. The Coal Mining Risk Assessment is presented in ES Volume III, Appendix 5.2: Coal Mining Risk Assessment .
		NRW notes that risks associated with land (slope stability) should be considered for all phases.	A consideration of slope stability is provided in Section 5.9 .
45	Soils	A Soil Management Plan will be produced. LQAS acknowledge this, noting that it should cover all soils (peat, organomineral and mineral). Detailed advice on the contents of the SMP is included in appendix 1. NRW note that the risks associated with soils should be scoped in as site investigation information is currently unavailable.	An assessment of soil is scoped into the ES. The Outline Soil Management Plan has followed the advice provided in Appendix 1 of ES Volume III, Appendix 1.2: Scoping Direction and is presented in ES Volume III, Appendix 5.4: Outline Soil Management Plan .

ID no.	Issue	Comment raised	Applicant response
46	Agricultural Land Classification (ALC)	The Scoping Report states there is no Best and Most Versatile (BMV) agricultural land within the Site and proposes to scope this matter out. LQAS confirm the Predictive ALC Map for Wales shows the Site to be at best Grade 4 (poor quality). PEDW agrees this matter can be scoped out of the ES.	The matter of agricultural land is scoped out of the ES.
47	Borrow Pits	If borrow pits are proposed, then this should be scoped in to the ES.	Borrow pits are not to be used for the Proposed Development; therefore, this matter has been scoped out of the ES.
48	Peat	NRW notes that the risks associated with peat and soils should be scoped in as site investigation information is currently unavailable. The PRA indicates there are some peat deposits to the north-west of the Site, however this will need to be confirmed via an appropriate site investigation. BCBC recommends the applicant should also consult the unified Peat Map of Wales. The applicant should use the definition of peat used in NRW's National Peatland Action Programme, 2020-2025; this includes any transitioning shallow peaty soils integral to the hydrological functioning of peat bodies. PEDW acknowledge that the presence of peat and any potential impact to is yet to be assessed, therefore peat is scoped in to the ES. The applicant should be mindful of the recent changes to PPW in terms of the location of any infrastructure should peat	Peat depth probing has been undertaken across the Site in May and June 2024, and in February 2025. The methodology and results of these investigations are presented in ES Volume III, Appendix 5.3: Depth of Penetration Survey Report. A total of 2,213 depth of penetration probes and 66 cores have been completed across the Site. This included targeted investigation at the proposed locations of infrastructure and along the existing and proposed tracks. Of these, only one probe result was classified as peat soils. All other locations did not identify peat soils. No consultation has been undertaken regarding peat soils, however the Proposed Development would not impact the small area of peat soil within the Site. Therefore peat has been scoped out of the ES and no further assessment is reported within this chapter.

ID no.	Issue	Comment raised	Applicant response
		be confirmed on-site. If it can subsequently be agreed with the relevant consultees that the development will avoid any impacts on peat, then this aspect of the environment can be scoped out and a rationale included in the ES.	
49	Significance criteria	NRW highlights that the significance associated with land and soils appears to only relate to short term impacts, this should include consideration of temporal scale of impacts. PEDW concurs with this advice, medium / long term impacts on land and soils should be scoped in and form part of the assessment.	The table that defines the magnitude of impacts relating to land and soils has been adapted since the methodology proposed in the EIA Scoping Report and now includes temporal definitions (Table 5.5). The temporal scale of impacts has been considered when undertaking the assessment, and the text clearly indicates where the magnitude of impact has been affected by temporal issues.
50	Enhancement of Land and Soils	No opportunities for enhancing the environment have been identified within the land and soils chapter. NRW highlights that opportunities to enhance the quality and resource capabilities of soils and groundwater via remediation, encouraging groundwater recharge for example, should be included.	If remediation is required in order to facilitate the Proposed Development, this would not typically be deemed an enhancement opportunity, as it is essential to allow the Proposed Development to proceed. However, this assessment considers whether such beneficial opportunities could be afforded during any required remediation works in Section 5.10 .
51	Proposed assessment methodology	NRW recommends the following documents be considered within the proposed assessment methodology: • SoBRA Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under	These documents have been considered during the assessment process for groundwater receptors.

ID no.	Issue	Comment raised	Applicant response
		Conditions of Future Climate Change (SoBRA, 2022); and • EA Groundwater protection position statements (Environment Agency, 2024) (Environment Agency, 2018).	

Additional Consultation / Statutory Pre-Application Consultation (PAC)

- 5.2.3 **Table 5.2** provides a summary of the responses received, in relation to land, soils and groundwater, following the statutory PAC process, and the necessary action taken to update the assessment, where relevant. Where appropriate the PAC responses have been summarised. The full consultee comments are set out in the standalone **Pre-Application Consultation Report**.
- 5.2.4 Following the PAC period, a meeting was held on 27 August 2025 between NRW and the Applicant to discuss issues relating to mitigation with respect to ground conditions, land and groundwater. The meeting identified that elements of the submission should be clarified to provide greater assurance that ground and groundwater will be protected by the proposed mitigation measures during all phases of the Proposed Development. The notes from that meeting are presented in **ES, Volume III, Appendix 5.5 Natural Resources Wales Meeting Notes (August 2025)**.

Table 5.2 PAC Comments and Responses

Consultee	Summary of Consultee Comments	Applicant Response
NRW	We note in Section 5.4.30 'Groundwater' onwards that the site is underlain by Secondary A aquifer with limited superficial coverage, resulting in a high groundwater vulnerability rating. Section 5.4.31 also states that groundwater depths across the site are unknown. It also states regional groundwater flow is expected to be in line with local topography and towards surface waters, however, flow dynamics more locally have not been monitored or investigated. Our recommendation is that sufficient groundwater investigation be undertaken.	A meeting between NRW and the Applicant occurred on the 27 August 2025. This included a discussion relating to obtaining sufficient data on groundwater prior to construction works commencing. It was agreed that ground investigation would be undertaken prior to construction works, and could be secured by condition. The ground investigation would target areas that are both close to proposed infrastructure, and have the potential for existing contamination to be present. Section 5.7 Additional Mitigation Measures has been updated to include further detail on the proposed ground investigation requirements (including groundwater depth and flow monitoring).
NRW	Table 5.10 'Sensitive Receptors' Land (potential contamination) discusses the potential for the introduction of contamination during the proposed development, and the interaction with known or unknown contamination from historical usage of the site, such as the four historical landfills and historical infilling with unknown material of quarries, earthwork excavations and the colliery workings. The quality of the land in these locations has not yet been quantified or characterisation through site investigation and therefore it is not possible to accurately assign a level of sensitivity or importance (we note the table has classified this as low).	For the purpose of this ES chapter, the sensitivity of the receptor has been determined based on Institute of Environmental Management & Assessment (IEMA) Guide: A New Perspective on Land and Soil in Environmental Impact Assessment criteria. These criteria do not factor in the existing contamination of the land when determining the sensitivity of the receptor. However, ES Volume III, Appendix 5.1: Preliminary Risk Assessment and the assessment of the effects reported in this Chapter, does consider the potential for known or unknown contamination to

Consultee	Summary of Consultee Comments	Applicant Response
	We would recommend a site investigation that focuses on particular infrastructure elements, notably turbine excavations, to assess groundwater and geo-environmental conditions.	be present within the Site, and the likely effects of mobilising any such contaminated material. A meeting between NRW and the Applicant occurred on 27 August 2025, including discussion relating to obtaining sufficient ground investigation data prior to construction works commencing. A ground investigation will be undertaken prior to construction works, and will be secured by condition. The ground investigation is expected to verify the baseline conditions of the Site, including the presence of any contamination. As recorded in ES, Volume III, Appendix 5.5 Natural Resources Wales Meeting Notes (August 2025) this approach has been agreed with NRW.
NRW	We note a discussion of ‘future baseline’ in Sections 5.4.40 - 5.4.42, we welcome this consideration, however without sufficient baseline characterisation at the Site (outlined in our previous response but for reference including but not limited to groundwater depths and fluctuations seasonally, groundwater flow dynamics including flow direction throughout the year, groundwater & surface water / groundwater & ecosystem interactions, quality of the land etc), the impacts of such considerations cannot be accurately determined. Considering the lifecycle of the project (circa 50 years with potential for extension), this assessment into the near and medium future should be looked into for future baseline.	The assessment considers the potential for changes to the groundwater baseline conditions to occur due to climate change. As noted in NRW’s response, this is discussed in ‘Future Baseline in the Absence of the Proposed Development’ and it is also considered further in the assessment (as set out in paragraph 5.8.3). As agreed with NRW, the Applicant will collect data relating to the existing groundwater regime as part of the ground investigation (to be secured by condition).

Consultee	Summary of Consultee Comments	Applicant Response
NRW	Section 5.6.4 'Groundwater (Quality and Quantity)' - consideration of dewatering requirements during construction, and the quantity and quality impacts of this (impacts on groundwater dependent ecosystems and impacts of potential groundwater contaminant distribution) has not been included. We recommend this is included with the planning application.	The Applicant has included consideration of the effects of dewatering during construction on groundwater quality and quantity, within Section 5.6 and 5.8 . Further information has also been added in to Section 5.7 with respect to mitigation relating to dewatering.
NRW	NRW noted the potential environmental impacts and pollution risks associated with a Battery Energy Storage System.	The BESS has been removed from the Proposed Development and consequently is no longer assessed in this ES.
NRW	NRW welcome the inclusion of a Decommissioning Environmental Management Plan and recommend the assessment includes key tasks for decommissioning and estimated costs that should be signed off by the local authority within which the infrastructure will operate.	A Decommissioning Environmental Management Plan (DEMP) would be produced to discharge a suitably worded planning condition. Section 5.7 outlines the likely tasks that would be managed by the DEMP. The production of the DEMP would be undertaken prior to decommissioning commencing and would be submitted to and approved by BCBC and NPTC.
NRW	As part of the decommissioning strategy, if buried materials will not be decommissioned such as cables, and that assumes that all above ground infrastructure is removed, there must be a Buried Cable Risk Assessment as the cables will be left buried in the environment forever, often in water-rich environments with peatland.	Should the decommissioning strategy for the Proposed Development proposed to not remove the underground cables (as is currently proposed), a Buried Cable Risk Assessment would be undertaken prior to decommissioning commencing. This would be produced to discharge a suitably worded planning condition.
NRW	We continue to recommend that a site investigation be undertaken that focuses on particular infrastructure elements, notably turbine excavations, to assess groundwater and geo-	A meeting between NRW and the Applicant occurred on 27 August 2025, including discussion relating to obtaining sufficient data on groundwater prior to

Consultee	Summary of Consultee Comments	Applicant Response
	environmental conditions. This is important in order to understand the impact of the development on the hydrogeological dynamics, noting the presence of groundwater springs / issues, surface waters (whether these are groundwater fed is not yet understood) and any groundwater dependent ecosystems). These would also help to inform upon geotechnical and temporary dewatering that may be required. Given the proposed height of the turbines, deep and spatially extensive foundations are expected. We do not believe that a sufficient and robust assessment of risk and impacts can be undertaken without appropriate site characterisation based on site specific information.	construction works commencing. A ground investigation will be undertaken prior to construction works, and will be secured by condition. The ground investigation will target areas that are both close to proposed infrastructure, and have the potential for existing contamination to be present, and will provide details relating to the existing groundwater regime. Information from the ground investigation will be used in designing geotechnical elements, and ensuring that any requirements for dewatering can be identified and prepared for in advance.
NRW	The Peatlands of Wales Map (View map DataMapWales) indicates there is no peat within the site boundary. In addition, there appears to be no evidence for the presence of peatland habitat or other section 7 habitat likely to have been derived from peatland habitat by modification. Given that the higher resolution peat mapping at the location of proposed infrastructure has also not located peat then we have no further observations to make.	Comment acknowledged. No changes made.
Health and Safety Executive (HSE)	The presence of hazardous substances on, over or under land at or above set threshold quantities (Controlled Quantities) may require Hazardous Substances Consent (HSC) under the Planning (Hazardous Substances) Act 1990 as amended. The substances, alone or when aggregated with others, for which HSC is required, and the associated Controlled Quantities, are	Comment acknowledged. No changes made.

Consultee	Summary of Consultee Comments	Applicant Response
	set out in The Planning (Hazardous Substances) (Wales) Regulations 2015. Hazardous Substances Consent would be required if the proposed development site is intending to store or use any of the Named Hazardous Substances or Categories of Substances and Preparations at or above the controlled quantities set out in schedule 1 of these Regulations. Further information on HSC should be sought from the relevant Hazardous Substances Authority.	
The Coal Authority / Mining Remediation Authority	The response identified the entries within and adjacent to the Site and noted that the Mining Remediation Authority may need ongoing access to these monitoring points.	The Applicant notes that access for the Coal Authority to their infrastructure should be maintained.
The Coal Authority / Mining Remediation Authority	The Coal Authority is of the opinion that building over the top of, or in close proximity to, mine entries should be avoided wherever possible, even after they have been capped, in line with their adopted policy: https://www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries	The Applicant is aware of the locations of recorded shafts, adits and surface workings, and has avoided these locations with the Proposed Development infrastructure.
The Coal Authority / Mining	Having reviewed the available coal mining and geological information the authors of the report conclude that there is a potential risk posed to the development by past coal mining activity and recommend that intrusive site investigations are	A ground investigation will be undertaken prior to construction works, to provide geotechnical and geo-environmental information. Where possible project infrastructure has avoided known locations of mine shafts, adits and surface workings, but if there are any

Consultee	Summary of Consultee Comments	Applicant Response
Remediation Authority	carried out to locate mine entries and investigate the presence of shallow coal workings. Where mine entries are present on site, we would recommend that building close to, or over these features, and their zones of influence is avoided. Where structures, such as wind turbines, and other infrastructure is proposed in areas of coal mining we would encourage the ability to micro site once the findings of investigations are known to avoid any conflict. This would ensure that operational infrastructure is not put at risk from land instability. We are pleased to see that RSK have provided a Coal Mining Constraints Plan, at Figure 11, although we note that not all supporting infrastructure appears to be included on this plan. However, it does not appear from this that the wind turbines themselves are in locations where mine entries are present.	remaining locations where the features are in proximity, the ground investigation will provide details to ensure that instability issues from coal mining legacy infrastructure is not a concern for the Proposed Development. The Applicant has added the infrastructure details (including turbine locations) to Figure 11 within the Coal Mining Risk Assessment (ES Volume III, Appendix 5.2).
The Coal Authority / Mining Remediation Authority	Wherever coal resources or coal mine features exist at shallow depth or at the surface, there is the potential for mine gases to exist. These risks should always be considered. The Planning & Development team at the Coal Authority, in its role of statutory consultee in the planning process, only comment on gas issues if our data indicates that gas emissions have been recorded on the site. However, the absence of such a comment should not be interpreted to imply that there are no gas risks present. Whether or not specific emissions have been noted by the Coal Authority, you should seek your own technical advice on the gas hazards that may exist, and appropriate measures to be implemented, from technically competent personnel.	The Applicant has identified the potential for risks arising from mine gases, and consideration of this will be made during ground investigation work and subsequent risk assessment, as appropriate. The scope for such monitoring work will be agreed in advance with the appropriate consultees (the local planning authority and/or the Coal Authority).

Consultee	Summary of Consultee Comments	Applicant Response
The Coal Authority / Mining Remediation Authority	It should be noted that Permission is required from the Mining Remediation Authority Permit and Licensing Team before undertaking any activity, such as ground investigation and ground works, which may disturb coal property. Please note that any comments that the Coal Authority may have made in a Planning context are without prejudice to the outcomes of any Permit application. Application forms for a permit and further guidance can be obtained from: www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property	The Applicant is aware of the requirement to apply for a permit prior to undertaking any investigation works relating to coal mining infrastructure, and will ensure that this is arranged prior to such works commencing.
The Coal Authority / Mining Remediation Authority	We have no data on mine water level in the vicinity of the site, but that we are aware of a mine water discharge within the planning area (Discharge 608). To try and assist the elevation of the mine water discharge is ~ 115 m AOD and the elevation of the site ranges from ~105 m AOD to ~241 m AOD. They comment that the mine water gradient in the area is unknown and mine water/ groundwater may be shallow beneath the site, there is therefore a potential risk of encountering mine water and/or groundwater during the proposed works. This water may be artesian. Measures should be put in place to manage water should it be encountered and all excavations must be properly sealed so as not to create a new flow pathway into or from any mine workings. It should be noted that continued flow from the mine water discharge on the site of the proposed development (Discharge 608) is understood to control mine water levels in the vicinity and must not be blocked or altered by the planned development.	The Applicant has integrated information provided in this comment into the ES chapter (see paragraph 5.4.2 and 5.4.23) and the Coal Mining Risk Assessment (see Sections 3.66, 4.4 and 5.5) .

Scope of the Assessment

5.2.5 The technical scope of this assessment has been established through an ongoing scoping process. As a result of this process, the technical scope of the assessment reported in this chapter comprises:

- Land (potential contamination): scoped in for all phases;
- Land (mining): scoped in for all phases;
- Land (mineral safeguarding): scoped in for the construction phase;
- Land (slope stability): scoped in for all phases;
- Soils: scoped in for all phases; and
- Groundwater: scoped in for all phases.

5.2.6 The following matters are considered unlikely to result in likely significant effects, and therefore have been scoped out of the assessment for all phases, as agreed through the EIA scoping process:

- Agricultural land classification and best and most versatile land; and
- Borrow pits: these are not intended to be used by the Proposed Development.

5.2.7 The following matter is considered unlikely to result in likely significant effects, and therefore has been scoped out of the assessment for the operation and decommissioning phases, as agreed through the EIA scoping process:

- Land (mineral safeguarding).

5.2.8 **Table 5.3** summarises where the scope of the assessment has changed since the receipt of the Scoping Direction, which is presented in **ES Volume III, Appendix 1.2: Scoping Direction**.

Table 5.3 Receptor/Matters Changed since the Scoping Direction

Receptor/ matter	Phase	Justification
Peat	All phases	As set out in Table 5.1 , ID. No 48 (above), the Scoping Direction requested that an assessment of the effects of the Proposed Development on peat soils be scoped into the ES. Subsequent surveys have confirmed that there is very limited peat soil on the Site and the Proposed Development would not result in a significant (or any) effect on peat soils. Consequently, peat soils have not been considered further in this assessment.

5.3 Methodology

- 5.3.1 This assessment has been undertaken in accordance with the following legislation, and with regard to the following planning policy and guidance. It should be noted that this chapter does not assess the compliance of the Proposed Development against relevant planning policy. Such an assessment is presented in the **Planning, Design and Access Statement**.

Legislation

- Part IIA of the Environmental Protection Act 1990 provides a statutory regime for identifying and remediating contaminated land (Environmental Protection Act, 1990);
- The Groundwater (Water Framework Directive) (Wales) Direction 2016 sets out obligations to protect groundwater (The Groundwater (Water Framework Directive)(Wales) Direction, 2016);
- The Environmental Permitting (England and Wales) Regulations 2016, provide a structure for overseeing activities which have the potential to harm human health or the environment (The Environmental Permitting (England and Wales) Regulations, 2016); and
- The Planning (Hazardous Substances) (Wales) Regulations outline the quantity of hazardous substances that can be stored on-site prior to the requirement for hazardous substances consent (The Planning (Hazardous Substances) (Wales) Regulations , 2015).

National Planning Policy

- The National Development Framework: Future Wales – the National Plan 2040 sets out the Welsh Government's land use priorities and provides a national land use framework for Strategic Development Plans (SDPs) and Local Development Plans (LDPs) (Welsh Government, 2021); and
- Planning Policy Wales 12 (Welsh Government Llywodraeth Cymru, 2024). This includes policies and guidance on managing new development, the key planning principles, sustainable management of natural resources, planning in relation to previously developed land and supporting infrastructure.

Local Planning Policy

- 5.3.2 Bridgend County Borough Local Development Plan (LDP) 2018-2033 (Bridgend County Borough Council, 2024) was adopted in March 2024 and Neath Port Talbot Adopted LDP (2011-2026) (Neath Port Talbot County Borough Council, 2016) was adopted in January 2016.
- 5.3.3 Policies of relevance for the Proposed Development from the BCBC LDP comprise:
- SP14: Sustainable Development of Mineral Resources;
 - ENT12: Development in Mineral Safeguarding Zones;
 - ENT13: Development in Mineral Buffer Zones; and

- SP17: Conservation and Enhancement of the Natural Environment.

5.3.4 Policies of relevance from the NPTC LDP comprise:

- EN6: Important Biodiversity and Geodiversity Sites;
- EN8: Pollution and Land Stability;
- SP1: Climate Change;
- SP17: Minerals;
- M1: Development in Mineral Safeguarding Areas; and
- M3: Development in Mineral Buffer Zones.

Guidance

- Environment Agency Guidance (adopted by NRW): Guidance on the risk assessment process in relation to contamination is given in the Land Contamination: Risk Management guidance (Environment Agency, 2025);
- Institute of Environmental Management and Assessment (IEMA) Guide: A New perspective on Land and Soil in Environmental Impact Assessment (IEMA, 2022);
- Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment, Revision 1 (DMRB, 2020);
- Design Manual for Roads and Bridges LA 104: Environmental Assessment and Monitoring, Revision 1 (DMRB, 2020);
- Design Manual for Roads and Bridges LA 109: Geology and Soils, Revision 0 (DMRB, 2019);
- SoBRA Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, (SoBRA, 2022);
- Land Contamination: a guide for developers (The Welsh Local Government Association, 2017);
- The Environment Agency's approach to groundwater protection, Version 1.2 (Environment Agency, 2018);
- The Environment Agency, protect groundwater and prevent groundwater pollution (Environment Agency, 2024). Environmental good practice on site guide (C811) (CIRIA, 2023); and
- Contaminated land risk assessment - a guide to good practice (C552) (CIRIA, 2001).

Baseline Characterisation

Extent of the Study Area

5.3.5 The study area for land, soil and groundwater is the area within the Site and up to 1 km from the Site boundary. The study area is shown on **ES Volume IV, Figure 5.1: Study Area for Land, Soil, and Groundwater**.

- 5.3.6 The size of the study area for land, soil and groundwater is based on professional judgement and has been drawn to identify receptors that may be impacted by the construction, operation and decommissioning phases, as well as those matters that may impact the Proposed Development. This study area has been agreed with Natural Resources Wales through the EIA scoping process and is set out in **ES Volume III, Appendix 1.1: EIA Scoping Report**.

Desk Study

- 5.3.7 In order to assess the potential for land contamination, a Preliminary Risk Assessment has been undertaken in accordance with Land Contamination Risk Management guidance (Environment Agency, 2025). The assessment has comprised a desk-based review of information published online, the purchase of an environmental data base report, and a site reconnaissance survey (details of which are provided in the following section). The report is provided in **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**.
- 5.3.8 A desk-based assessment of issues that specifically relate to coal mining legacy features has been prepared, and is presented as **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment**.
- 5.3.9 In order to establish the baseline conditions within the study area, data has been obtained from the following sources:
- Geological maps (bedrock and superficial geology) (British Geological Survey, 2025);
 - Hydrogeological and groundwater vulnerability maps (Department for Environment, Food and Rural Affairs, 2025);
 - Soil survey maps (LandIS, 2025);
 - Mineral safeguarding information (Bridgend County Borough Council, 2024) (Neath Port Talbot County Borough Council, 2016);
 - Geological conservation review sites (Welsh Government, 2021);
 - Site-specific environmental database report, including Environment Agency, local authority and British Geological Survey data on the location of waste sites, pollution incidents and potentially contaminated sites, abstraction and discharge records relating to groundwater, plus aquifer designation and source protection zones (Envirocheck report provided in **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**);
 - Ordnance Survey (OS) mapping; and
 - DataMapWales (Welsh Government, 2025) to obtain LiDAR mapping, and Development Advice Maps.

Field Studies

- 5.3.10 A walkover survey of the Site has been undertaken on 13 July 2023, with the findings detailed in **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**. The purpose of the walkover survey was to provide site-specific data to support the desk-based assessment.

- 5.3.11 Two Peat Depth Surveys have been completed for the Site. The first survey took place in May/ June 2024 and the second survey in February 2025. The results of these surveys are provided within **ES Volume III, Appendix 5.3: Depth of Penetration Survey Report**. While the Proposed Development is not anticipated to affect peat soils, the data collected during these surveys have been used to confirm the baseline understanding of the Site.

Assessment Methodology

Land and Soil

- 5.3.12 For **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**, a desk-based assessment was completed in accordance with relevant British Standards and authoritative technical guidance. The assessment of the contamination status of land within the Site and study area is in line with the technical approach presented in Land Contamination Risk Management (Environment Agency, 2025). The scope of works included:
- Review of the history of development on the Site and surroundings;
 - Assessment of local geology, hydrogeology and hydrology;
 - Review of relevant information held by appropriate statutory authorities;
 - Review of any previous site investigation reports made available;
 - Completion of a reconnaissance survey (29 and 30 November 2023) to assess the visual condition of the Site;
 - Development of an initial Conceptual Site Model;
 - Preliminary consideration of geotechnical constraints and hazards; and
 - Identification of the need for further action, e.g. intrusive investigations.
- 5.3.13 The assessment of contaminated land is based on the development of a Conceptual Site Model. This approach identifies sources, pathways and receptors at a site and assesses the potential for a link to exist between a source of contamination and a receptor which may then constitute an effect (or risk):
- Source: this is the identification of a specific source of contamination that is located on- or off-site;
 - Pathway: this is the means by which the contaminant could migrate through the environment to reach a receptor; and
 - Receptor: can be property, humans, and the environment (e.g., controlled waters/ecology) which could be affected by contamination.
- 5.3.14 For the purposes of the assessment reported in this chapter, an effect is only considered likely where a complete source-pathway-receptor link exists.

5.3.15 As noted above, the desktop study presented as **ES Volume III, Appendix 5.1: Preliminary Risk Assessment** was designed to meet the objectives of a preliminary (phase 1) investigation, as defined by BS 10175:2011 + A2 2017 (BSI, 2017). The British Standard requires the Preliminary Risk Assessment to consider the "vicinity" of the Site, which is defined as being within approximately 250 m of the Site. However, due to the 1 km study area applied to the Site for this assessment of land, soil and groundwater receptors, data up to 1 km from the Site boundary was reviewed, therefore the Preliminary Risk Assessment covered the Site and the study area of 1 km, as shown on **ES Volume IV, Figure 5.1: Study Area for Land, Soil, Groundwater and Surface Water**.

5.3.16 Data obtained from the Preliminary Risk Assessment, including the Conceptual Site Model, was used to inform the baseline sections of this chapter (see **Section 5.4**).

Geological Hazards (Mining and Slope Stability Issues)

5.3.17 It has been requested through the EIA Scoping Direction that geological hazards be considered within this chapter of the ES. The specific geological hazards to be considered are:

- Potential risks due to coal mining issues; and
- Potential risks due to instability of strongly inclined to precipitous slopes.

5.3.18 Slopes which have an angle of greater than 35° in rock are considered precipitous, as based on the definition in Table 2.1 of CIRIA C810 (2023) (CIRIA, 2023). Slopes which have an angle greater than 10° in superficial deposits, including colliery spoil, are considered strongly inclined to steep.

5.3.19 The chapter presents an initial assessment of whether the Proposed Development would be affected (and to what degree) by these issues. However, it must be clarified that 'geological hazards' are not a 'sensitive receptor', and therefore although these issues are being considered within the ES, the assessment methodology is different to when considering the effects of the Proposed Development on a sensitive receptor (as described in the preceding sections). This approach is also followed by DMRB LA 109 Geology and Soils (DMRB, 2019), which indicates that geotechnical hazards and land stability are not assessed within an Environmental Statement.

5.3.20 The assessment with respect to geological hazards considers the potential risks that hazards associated with coal mining or steep slopes could have on the Proposed Development. The results of this assessment will be used to assist in designing and developing the strategy for the intrusive ground investigation that will form a later part of the preparatory work for the Proposed Development. In most cases, the risks posed by geological hazards can be mitigated (at least in some degree), by engineered solutions (for example deeper foundations for structures, or an alternative design of mounting structures for PV panels), or by adjusting the locations of project elements. Approximate locations of areas where geological hazards may be present are illustrated on **ES Volume IV, Figure 5.3: Gradients of Slopes**.

- 5.3.21 A Coal Mining Risk Assessment has been completed for the Site, and this is presented in **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment**. The assessment is required due to the Site being within an area defined by the Mining Remediation Authority (MRA) as a 'Coal Mining Development Referral Area'. **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment** uses a variety of sources of information to determine coal mining issues, then identifies and assesses the site-specific coal mining risks and proposes an appropriate mitigation strategy relevant for the proposed site end-use.

Assessment Criteria

- 5.3.22 The assessment criteria for land, soil and groundwater adopted for this assessment are detailed below. It should be noted that these criteria differ from the criteria proposed within **ES Volume III, Appendix 1.1: EIA Scoping Report**, with an updated approach that provides additional robustness in terms of assessing the potential effects relating to land, soil and groundwater.

Land and Soil

Receptor Sensitivity

- 5.3.23 Sensitivity criteria for land and soil, derived from the IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment (IEMA, 2022) (herein referred to as the 'IEMA Guide'), are defined in **Table 5.4**.
- 5.3.24 As noted in the IEMA Guide, the sensitivity of soil functions should be determined with reference to soil properties and professional judgement. Soil properties include:
- **Physical Properties:** Soil depth, texture, structure, porosity, drainage, infiltration, water retention, storage capacity, stone content and hydraulic conductivity, etc (considered in **Table 5.4** through soil hydrology criteria);
 - **Chemical Properties:** Soil organic matter, stored carbon, nutrient, and pH levels (considered in **Table 5.4** through soil carbon criteria); and
 - **Biological Properties:** Soil biota diversity and population (considered in **Table 5.4** through ecological habitat, soil biodiversity and platform for landscape criteria).
- 5.3.25 Where IEMA criteria relates to an element of this assessment that has been scoped out, for example Agricultural Land Classification, the criteria have not been replicated.

Table 5.4 Receptor Sensitivity for Land and Soil

Sensitivity (in-situ soil)	Soil resource
Very High	• Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected features within a European site (e.g., Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar); • Soil carbon: Peat soils; • Soils with potential for ecological/landscape restoration; • Soil hydrology: Very important catchment pathway* for water flows and flood risk management; • Archaeology, cultural heritage, community benefits and geodiversity: Scheduled Monuments and adjacent areas; World Heritage and European designated sites; Soils with known archaeological interest; Soils supporting community/recreational/educational access to land covered by National Park designation; and • Source of materials: Important surface mineral reserves that would be sterilised (i.e., without future access).
High	• Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected features within a UK designated site (e.g., UNESCO Geoparks, Site of Special Scientific Interest (SSSI) or Protected Landscapes, Special Landscape Area, and Geological Conservation Review sites); Native Forest and woodland soils; Unaltered soils supporting semi-natural vegetation (including UKBAP priority habitats); • Soil carbon: Organo-mineral soils (e.g., peaty soils); • Soil hydrology: Important catchment pathway* for water flows and flood risk management; • Archaeology, cultural heritage, community benefits and geodiversity: Soils with probable but as yet unproven (prior to being revealed by construction) archaeological interest; Historic parks and gardens; Regionally Important Geological and Geomorphological Sites; Soils supporting community/recreational/educational access to Regionally Important Geological and Geomorphological Sites and Protected Landscapes; and • Source of materials: Surface mineral reserves that would be sterilised (i.e. without future access).
Medium	• Ecological habitat, soil biodiversity and platform for landscape: Soils supporting protected or valued features within non-statutory designated sites (e.g., Local Nature

Sensitivity (in-situ soil)	Soil resource
	Reserves (LNRs), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs) or Sites of Important Nature Conservation (SINCs), Special Landscape Areas; Non-Native Forest and woodland soils; • Soil carbon: Mineral soils; • Soil hydrology: Important minor catchment pathway* for water flows and flood risk management; • Archaeology, Cultural heritage, community benefits and geodiversity: Soils with possible but as yet unproven (prior to being revealed by construction) archaeological interest; Soils supporting community/recreational/educational access to land; and • Source of materials: surface mineral reserves that would remain accessible for extraction.
Low	• Ecological habitat, soil biodiversity and platform for landscape: Soils supporting valued features within non-designated notable or priority habitats/landscapes. Agricultural soils; • Soil carbon: Mineral soils; • Soil hydrology: Pathway* for local water flows and flood risk management; • Archaeology, cultural heritage, community benefits and geodiversity: Soils supporting no notable cultural heritage, geodiversity nor community benefits; Soils supporting limited community/recreational/educational access to land; and • Source of materials: Surface mineral reserves that would remain accessible for extraction.
Negligible	• As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions.

Notes: * As defined by the Site and catchment characteristics according to the professional judgement of a catchment hydrologist.

Magnitude of Impact (Change)

- 5.3.26 The magnitude of impact (change) is classified using the criteria presented in **Table 5.5**, which are derived from the IEMA Guide (IEMA, 2022).

Table 5.5 Magnitude of Impact (change) Criteria for Land and Soil

Magnitude of impact (change)	Description of impacts restricting proposed land use
Major	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20 hectares or loss of soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*). or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20 hectares, or gain in soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*).
Moderate	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 hectares and 20 hectares or loss of soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*). or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 hectares and 20 hectares, or gain in soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in EIA team.
Minor	Permanent, irreversible loss over less than 5 hectares or a temporary, reversible loss of one or more soil functions or soil volumes, or temporary, reversible loss of soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in EIA team. or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5 hectares or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features (as set out in Table 2 of the IEMA Guide), as advised by other factor specialists in EIA team.

Magnitude of impact (change)	Description of impacts restricting proposed land use
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use.

Notes: # The IEMA Guide has what is assumed to be an error in this cell, but reference to Table 5 of the IEMA Guide confirms that the magnitude should be shown as Major, which is presented here, instead of reproducing the perceived IEMA error.

* Temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils.

- 5.3.27 The magnitude of impact with respect to factors affecting land and soils receptors takes consideration of the temporal scale of the impacts (temporary short-term; temporary medium-term; temporary long-term or permanent), alongside the nature of the impact.

Significance of Effect for Land and Soil

- 5.3.28 The significance of effect for land and soil is based on the sensitivity of the receptor and the magnitude of impact (change), as outlined in **Table 5.6** and derived from the IEMA Guide (IEMA, 2022). The significance of effect can be adverse or beneficial.
- 5.3.29 The significance of an effect is reported as either 'significant' or 'not significant'. Any effects determined as 'moderate' or above are considered to be significant. Any effects determined as 'slight' or below are considered not significant.
- 5.3.30 Where **Table 5.6** indicates a range for the significance of effect and the effect could be either significant or not significant (e.g. moderate / slight), professional judgement has been applied to define the significance. Where both categories within the range fall within either 'significant' or 'not significant', the range has not been adjusted to a single descriptor (for example if the range is 'neutral or slight', as both effects are considered to be not significant; or if the range is 'large or very large', as both effects are considered to be significant).

Table 5.6 Significance of Effect Criteria for Land and Soil

Sensitivity	Magnitude of impact (change)				
	No change	Negligible	Minor	Moderate	Major
Negligible	Neutral	Neutral or Slight*	Neutral or Slight	Neutral or Slight	Slight
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Very high	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large

* This cell is listed as 'Slight' in the IEMA Guide, but has been adjusted to 'Neutral or Slight' to be consistent with the ranking scheme (the significance of effect should be equal to or lower than the adjacent cell to the right, not higher)

Groundwater

Receptor Importance

5.3.31 The importance criteria presented in **Table 5.7** are derived from DMRB LA 113: Road Drainage and the Water Environment (DMRB, 2020).

Table 5.7 Receptor Importance for Groundwater

Importance	Typical Criteria	Typical Examples
Very High	Nationally significant attribute of high importance	- Principal aquifer providing a regionally important resource, and/or supporting a site protected under EU and UK legislation; - Groundwater that locally supports a groundwater dependent terrestrial ecosystem; and - Source Protection Zone 1.
High	Locally significant attribute of high importance	- Principal aquifer providing locally important resource or supporting a river ecosystem; - Groundwater that supports a groundwater dependent terrestrial ecosystem; and - Source Protection Zone 2.

Importance	Typical Criteria	Typical Examples
Medium	Of moderate quality and rarity	• Aquifer providing water for agriculture or industrial use with limited connection to surface water; and • Source Protection Zone 3.
Low	Lower quality	• Unproductive strata.

Magnitude of Impact (Change)

5.3.32 The magnitude of impact has been classified using the criteria presented in **Table 5.8**, which are adapted from DMRB LA 113 (DMRB, 2020).

Table 5.8 Magnitude of Impact Criteria for Groundwater

Magnitude of Impact	Criteria	Typical Example
Major adverse	Results in loss of attribute and/or quality and integrity of the attribute.	• Loss of, or extensive change to, an aquifer; • Loss of regionally important water supply; • Potential high risk of pollution to groundwater from routine runoff; • Loss of, or extensive change to groundwater dependent terrestrial ecosystem or baseflow contribution to protected surface water bodies; and • Reduction in water body Water Framework Directive classification. Loss or significant damage to major structures through subsidence or similar effects.
Moderate adverse	Results in effect on integrity of attribute, or loss of part of attribute	• Partial loss or change to an aquifer; • Degradation of regionally important public water supply or loss of significant commercial/ industrial/ agricultural supplies; • Potential medium risk of pollution to groundwater from routine runoff; • Partial loss of the integrity of groundwater dependent terrestrial ecosystem; • Contribution to reduction in water body Water Framework Directive classification; and • Damage to major structures through subsidence or similar effects or loss of minor structures.

Magnitude of Impact	Criteria	Typical Example
Minor adverse	Results in some measurable change in attributes, quality or vulnerability	- Potential low risk of pollution to groundwater from routine runoff; and - Minor effects on an aquifer, groundwater dependent terrestrial ecosystems, abstractions and structures.
Negligible	Results in effect on attribute, but of insufficient magnitude to affect the use or integrity	No measurable impact upon an aquifer and/or groundwater receptors.
Minor beneficial	Results in some beneficial effect on attribute or a reduced risk of negative effect occurring	- Reduction of groundwater hazards to existing structures; and - Reductions in waterlogging and groundwater flooding.
Moderate beneficial	Results in moderate improvement of attribute quality	- Contribution to improvement in water body Water Framework Directive classification; - Improvement in water body catchment abstraction management Strategy (or equivalent) classification; and - Support to significant improvements in damaged groundwater dependent terrestrial ecosystem.
Major beneficial	Results in major improvement of attribute quality	- Removal of existing polluting discharge to an aquifer or removing the likelihood of polluting discharges occurring; - Recharge of an aquifer; and - Improvement in water body Water Framework Directive classification.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance of Effect for Groundwater

5.3.33 The significance of effect for groundwater relating to potential contamination is based on the importance of the receptor and the magnitude of impact, as outlined in **Table 5.9** and adapted from DMRB LA 104: Environmental Assessment and Monitoring (DMRB, 2020). The significance of effect can be adverse or beneficial.

- 5.3.34 The significance of an effect is reported as either 'significant' or 'not significant'. Any effects determined as 'moderate' or above are considered to be significant. Any effects determined as 'slight' or below are considered not significant.
- 5.3.35 Where **Table 5.9** indicates a range for the significance of effect and the effect could be either significant or not significant (e.g. moderate / slight), professional judgement has been applied to define the significance. Where both categories within the range fall within either 'significant' or 'not significant', the range has not been adjusted to a single descriptor (for example if the range is 'neutral or slight', as both effects are considered to be not significant; or if the range is 'large or very large', as both effects are considered to be significant).

Table 5.9 Significance of Effect Criteria for Groundwater

Importance	Magnitude of impact				
	No change	Negligible	Minor	Moderate	Major
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Very high	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large

5.4 Baseline Conditions

Existing Baseline

Discharge Consents

- 5.4.1 There are two discharge consents within the Site, which are licensed for sewage discharge and trade discharge. There are 22 off-site discharge consents within 1 km of the Site, which are related to sewage, minewater and trade discharges. These discharge to ground, or to surface watercourses.
- 5.4.2 The MRA has provided information relating to a minewater discharge located within the Site boundary (reference Discharge 608). The elevation of this minewater discharge in this location is stated to be around 115 m AOD. The MRA indicate that the gradient of minewater is unknown. The flow of this minewater discharge is important in controlling minewater levels, and must not be impeded by the Proposed Development.

Historical Site Usage

- 5.4.3 Since the earliest available historical mapping (1876), the Site has undergone little change and comprised mainly fields, heathland, grassland and woodland, with a number of roads, streams and farm buildings. Since the oldest available maps, many of the areas of heathland and grassland have been cultivated to improve the land for agricultural practices.
- 5.4.4 Specific elements noted on historical mapping included:
- Historical gravel pits (Envirocheck map reference D7);
 - A Roman camp and intrenchments (E2, E3);
 - Areas of earthworks (quarries or pits) (E4);
 - A number of old quarries, which do not appear to have been backfilled (E9, E10, mainly on-site, but also partially outside the Site boundary);
 - Structures labelled 'British Residence' and 'standing stones' (E10);
 - Historical tramway (E11, E15);
 - 'Old coal level' located adjacent to Nant Cefnydfa, in the north part of E4 and another in the southwest (east of intrenchments);
 - Ton Phillip Colliery noted mainly off-site to the south, although some features are within the Site boundary (shafts and adits). Noted disused by 1964 (B10);
 - Coal level noted in southwest corner, connected to Ty-talwyn colliery, which is off-site to the west of the Site. Noted disused by 1964 (B13); Old levels noted in southern and south-eastern section of Site (B12, B16);
 - A number of sites of old huts located around the centre of the Site (E);
 - Area within section of Site shown on map E4 labelled with 'Springs', 'Sinks' and 'Issues'. 'Issues' labelled in the southwest of E4 and tank noted in the same area (E4); and
 - A refuse tip was noted outside the Site boundary, to the south of Baiden Farm (B15).
- 5.4.5 Off-site historical features identified and considered within the assessment with respect to contamination include:
- Gadlys woollen mill/factory with mill race, disused by 1918. Labelled as Brockfield Mill by 1964. 250 m north of Site boundary (E14);
 - Old Quarry, possibly not backfilled. Approximately 500 m north of Site boundary (E14);
 - Old coal shafts and levels, not marked beyond 1989 map editions. Approximately 100 m north of Site boundary (E15);
 - Bridgend Paper Mill with associated tanks and other infrastructure. Approximately 80 m north east of the Site boundary (E12);
 - Settling ponds related to Llynfi Power Station. Approximately 500 m north of the Site boundary (E8);
 - Llynfi Power Station (closed in 1977 and subsequently demolished). Approximately 680 m east of the Site boundary (F9);

- Ty-Talwyn Colliery, labelled disused by 1963. Approximately 100 m west of the Site boundary (B9, B13); and
- Aber-baiden Colliery, noted disused from 1964. Approximately 750 m west of the Site boundary (A16).

5.4.6 Where land is used for agricultural purposes, it is not clear to what extent it has been used as arable farmland, as during the site walkover (completed in July 2023), most of the land was being used for grazing. Where arable uses have occurred, there may be some level of contamination associated with the use of pesticides, herbicides and fertilisers.

5.4.7 Mining-related activities can have environmental impacts that include pollution from machinery and generation of hazardous wastes, including heavy metals, asbestos, polycyclic aromatic hydrocarbons (PAHs), ash, solvents, sulphates and acids. There is also the potential for associated erosion issues and quality issues for surface water and groundwater.

5.4.8 It is possible that fill material of unknown composition was placed during the construction of localised historical structures, and potentially used to backfill quarries and pits.

Landfill Sites and Waste Transfer Sites

5.4.9 There are no active landfill sites recorded as being present within the Site boundary.

5.4.10 Details on historical landfill sites and historical waste management sites that are recorded within the Site boundary or within the 1 km study area are listed in **Table 5.10**.

Table 5.10 Landfill and Waste Management Sites

Licence holder	Location/ name	Reference	Waste type	Dates	Grid reference	Distance from Site
Not supplied	Cwm Risca Farm	Not supplied	Inert	Not supplied	287800, 184800	On-site
Messers Antony	Cwm Risca Farm	20	Natural stone, slate, bricks, soil	Licence cancelled Sept 1991	287860, 184620	On-site
T Antony and Sons	Tondu, Bridgend	0	Inert, industrial and household	31/12/1990-31/12/1992	287829, 184595	On-site
Llynfi Power Station	Cwn Nant Gwyn	0	Not supplied	First input 31/12/1980, last date not supplied	286792, 187176	On-site
Morgan	Ffordd Y Gyfraith, Bridgend	PP3698FN	Waste management facility (waste type not specified)	Expired, 17/09/92	287200, 184600 (same location as first row)	76 m to W
D Morgan	Ffordd Y Gyfraith Farm, Tondu	22	Excavated natural materials, hardcore and rubble and scrap rubber	Cancelled (June 1992)	287200, 184550	89 m to W
Davies Brothers	Cefn Cribbwr, Bridgend	0	Inert, industrial, commercial and household	31/12/1980-31/12/1984	287098, 184844	161 m to W

Licence holder	Location/ name	Reference	Waste type	Dates	Grid reference	Distance from Site
W Howells	Baiden Farm, Bridgend	16	Inert demolition and natural excavation waste	Closed Dec 1990	287050, 184950 (very close to location above)	178 m to W
Davies Brothers	Baiden Farm, Tondy	4	Excavated natural materials, hardcore and rubble and scrap rubber	Superseded Dec 1980	287050, 184950 (same location as above)	178 m to W
W Howells	Baiden Farm, Bridgend	34028	Inert	31/12/1990-31/12/1994	287059, 184865	186 m to W
D Morgan	Tondy, Bridgend	34041	Inert	01/05/1992–31/01/1996	287084, 184499	213 m to W

Land Contamination

- 5.4.11 Based on the historical use of the Site, the following have been identified as previous Site uses which could have resulted in contamination being present within the ground or groundwater:
- Agricultural land use;
 - Made ground (anticipated to be localised to historical structures, roads and localised areas of historical coal mining);
 - Former quarries and pits that may have been backfilled with anthropogenic material;
 - Former collieries and mine operations, including former tramways and areas of colliery waste; and
 - Refuse tips and landfills, including the four on-site historical landfill sites and waste management sites listed within **Table 5.10**.
- 5.4.12 In addition to on-site potential sources of contamination, the following off-site potential sources of contamination have been identified:
- Agricultural land use;
 - Made ground (anticipated to be localised to historical structures roads and localised areas of historical coal mining);
 - Former commercial and industrial facilities, including Gadlys woollen mill/factory and Llynfi Power Station;
 - Former collieries and mine operations, including tramways and colliery waste; and
 - Refuse tips and landfills.

Summary of Risks Determined at Preliminary Risk Assessment Phase

- 5.4.13 In summary, the overall risks determined at the Preliminary Risk Assessment phase are as follows:
- There is the potential for a risk of migration of ground gases from possible shallow coal workings and accumulation in enclosed spaces resulting in asphyxiation and/or explosion. This risk will require consideration where unmanned or manned structures are to be located within the affected areas of the Site; and
 - The potentially complete contaminant linkage needs to be assessed further through appropriate site investigation to target the identified potential risk, and to assess the feasibility of identified pathways.

Coal Mining

Opencast Workings

- 5.4.14 Former quarries (historical opencast workings) associated with sandstone extraction were present along the far northern parts of the Site (areas E9 and E10) and southern Site edges (areas B10 and E1). There are no known locations where opencast coal extraction has occurred.

Mine Shafts and Adits

- 5.4.15 As detailed in **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment**, there are 12 mine entries located within the Site boundary, including three shafts and nine adits (with further mine entries located outside the Site boundary, but within 20 m). The locations of these features, along with distances to development features, are shown on **ES Volume IV, Figure 5.4: Mine Entry Locations and Distances to Development Features**.
- 5.4.16 The location of mine entry 287185-001 (an adit) was visually confirmed during a site reconnaissance visit in July 2023, but no other shaft or adit entrances were visually identified.
- 5.4.17 The majority of on-site mine entries are located in the south-east and eastern section of the Site. Two mine entries are close to proposed areas of solar PV panels, as detailed below:
- Mine entry 286185-003 is located approximately 140 m from solar PV area G; and
 - Mine entry 287185-004 is located approximately 56 m from solar PV area N.

Worked Coal Seams

- 5.4.18 Coal seams are present across most of the Site, as shown on figures provided in **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment**. Shallow workings may be present within these seams in some areas of the Site. However, based on the available data, it is expected that most of the working beneath the Site relates to deeper worked seams. These are a lesser concern to the construction of the Proposed Development features, due to the presence of a significant thickness of intact rock above the workings, which would prevent migration of any collapses within the worked seams upwards to the surface. The locations of these features are shown on **ES Volume IV, Figure 5.5: Other Coal Mining Constraints**.
- 5.4.19 Where coal seams are present which are likely to have been worked underground, the workings would be likely to have been constructed as pillar and stall workings, where columns of coal were left in place to prevent collapse during operation.
- 5.4.20 Coal seams present beneath the Site, and possibly worked at shallow depth (and associated with horizontal passages of mine adits), could result in areas of ground instability within the Site. It should be noted that “shallow” workings are defined as anything within 30 m of the surface (according to the Risk based approach to development management: Guidance for developers, version 4 (The Coal Authority, 2017). Shallow seams, if worked underground, would present a potential risk to ground surface stability if the workings were to collapse, with resultant surface collapse also occurring.
- 5.4.21 These issues will be addressed by designing and undertaking an intrusive investigation to locate such features, followed by the determination of appropriate treatment methods (if appropriate) to ensure that mining instability concerns are resolved prior to construction works being undertaken. This will be secured via planning condition and undertaken to inform the engineering design process.

Further information relating to the scope of this work is provided in **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment**.

Coal Mining Gases

- 5.4.22 The underlying Coal Measures are considered to be a potential source of hazardous ground gas and shallow coal workings and mine entries can provide preferential migration pathways for gases.

Minewater

- 5.4.23 Based on information provided by the MRA, there is the potential of encountering minewater during the Proposed Development, and it is noted that this water may be artesian in nature.

Mineral Safeguarding

- 5.4.24 The Neath Port Talbot County Borough Council Local Development Plan (Neath Port Talbot County Borough Council, 2016) does not indicate the presence of any mineral safeguarding areas or minerals areas of search within their area of the Site.
- 5.4.25 The Bridgend County Borough Replacement Local Development Plan (Bridgend County Borough Council, 2024) shows that the majority of the land within their area inside the Site boundary is covered by Policy ENT12: Development in Mineral Safeguarding Zones. This relates to a large area of sandstone and igneous rock, and some smaller areas of sandstone.

Steep Slopes

- 5.4.26 The Site extends from areas of low elevation to the east to areas of higher elevation further west. Secondary watercourses are present across the Site and flow either southward to eastwards.
- 5.4.27 At the northern area of the Site, the slope angles appear to be greater than 35° with the slope faces dipping toward north-east, as shown in **ES Volume IV, Figure 5.3: Gradients of Slopes**. The western boundary and western area of the Site are occupied by some precipitous slopes, which are dipping westward within the Site. Along the eastern boundary of the Site, the slopes are precipitous and present along the minor watercourses with the slope faces dipping toward the watercourse channel. At the southern and south-western areas of the Site, a thin rim of strongly inclined slopes (with a slope angle greater than 10°) is present with slope faces dipping southward: this area is occupied by many mine entries related to past coal activities and therefore the potential for the presence of deposits of colliery spoil should be considered, with some areas corresponding to locations of mapped opencast coal extraction (see **ES Volume IV, Figure 5.5: Other Coal Mining Constraints**).

- 5.4.28 The environmental database, as provided in **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**, indicates that a moderate to high potential for landslide ground stability hazard is present on-site; however, no further information about the landslide type and its extension are provided.
- 5.4.29 The BGS GeoIndex Onshore website (British Geological Survey, 2025) indicates that two landslides have happened within the Site boundary; however no details on the type of landslides or their extents are provided.
- 5.4.30 All landslides reported by the BGS GeoIndex and the potential landslide locations listed in the environmental database indicate that these landslide locations are likely to be located within the area of the precipitous slopes. While several landslide locations have been recorded at the northern area and western and southern boundaries of the Site, only one has been reported at the eastern boundary of the Site. No infrastructure for the Proposed Development is located within these areas.
- 5.4.31 No superficial deposits are present on-site, except at the northern boundary of the Site, where the steep slope is dipping north, away from the Site. It is considered that the superficial deposits do not pose any risk to the stability of the slope to the northern boundary of the Site; however this needs to be verified at each built development locations during the engineering design phase.

Groundwater

- 5.4.32 The Site is entirely underlain by a Secondary A aquifer relating to the sandstone bedrock (which is classified as being of high vulnerability). There is limited superficial geology present across the Site. However, a small area of secondary (undifferentiated) aquifer is located in the northernmost part of the Site, as shown on **ES Volume IV, Figure 5.2: Location of Sensitive Receptors Relating to Land, Soil and Groundwater**.
- 5.4.33 Groundwater depths across Site are unconfirmed. It is anticipated that the regional direction of groundwater flow is in line with local topography and towards surface waters.
- 5.4.34 Where the Site is at higher elevation, it is anticipated that groundwater would be relatively deep. In areas close to watercourses, or where the slope of the ground is closer to horizontal, groundwater could be present closer to the ground surface. This is corroborated by the presence of springs within the lower elevations within the Site.
- 5.4.35 The Site is located in a former coal mining area and may be associated with rebounding groundwater levels following the end of mining and associated dewatering. Refer to **paragraph 5.4.23** for further information on minewater.
- 5.4.36 The environmental database report indicates that there are no groundwater abstractions on-site. The closest licensed groundwater abstraction borehole is located 162 m east of the Site, within Bridgend Paper Mill (now known as WEPA).

- 5.4.37 Information available in the Envirocheck report (Envirocheck, 2023) and DataMapWales website (Welsh Government, 2025) indicates that the Site does not lie within a currently designated groundwater Source Protection Zone (SPZ).

Soil

- 5.4.38 Soil associations mapped as being present across the Site are as listed below (LandIS, 2025):
- Soil association 13: the soils in this association are defined as freely draining acid loamy soils over rock, and these soil types are present across the western and southern areas of the Site; and
 - Soil association 19: the soils in this association are defined as slowly permeable wet very acid upland soils with a peaty surface, and are mapped as being present on some of the more eastern parts of the Site, typically at lower elevations.
- 5.4.39 **ES Volume III, Appendix 7.4: Outline Soil Management Plan** identifies that probing fieldwork undertaken across the Site identified five different soil types from the soil cores. These are; silty loam, sandy loam, silty clay, silty clay loam and peat, the last of which was only identified in one location and has been scoped out of the assessment, as discussed in **Table 5.1** and **Table 5.3**.
- 5.4.40 Soil cores show silty loam is present across the majority of Site (55 of 66 cores). Soils are similar across much of the Site as indicated in the published National Soils Map, however there is no clear change in soil type at the southern and northern edges of Site where Soilscape 19 is mapped.

Sensitive Receptors

- 5.4.41 **Table 5.11** sets out the receptors scoped in as relevant to this assessment and their assigned sensitivity or importance. The location of these receptors is illustrated in **ES Volume IV, Figure 5.2: Location of Sensitive Receptors Relating to Land, Soil and Groundwater**.

Table 5.11 Sensitive Receptors

Receptor/ Matter	Discussion	Sensitivity / Importance
Land (potential contamination)	The land within the Site is at risk from contamination as a result of the Proposed Development. This could include either accidental introduction of pollution during construction, operation or decommissioning works, or impacts due to interactions with known or unknown existing contamination. The sensitivity of the receptor (land) is assigned as low, based on the criteria in Table 5.4 as the soils are mineral	Low

Receptor/ Matter	Discussion	Sensitivity / Importance
	agricultural soils and do not support any significant geodiversity or community/recreational/ educational access to land.	
Land (mining)	The historical mining legacy within the study area has been assessed with respect to the potential for adverse impacts on the Proposed Development (see Section 5.9 Geological Hazards). It is not appropriate to consider mining features in terms of a sensitive receptor, however, where other issues could be affected by the presence of below ground mining features (for example movement of groundwater into/out of voids, potentially mobilising contamination from mines), this is explained in the relevant sections of this chapter.	Not applicable
Land (mineral safeguarding)	The Site is predominantly within a mineral safeguarding zone for either sandstone or igneous rock (within BCBC). In terms of the potential for future extraction the Proposed Development would only affect very small areas of land for the full term of the Proposed Development (50 years), and large swathes are currently classed as mineral safeguarding zones. It is also not anticipated that BCBC would plan to extract resources from across the full extent of the mineral safeguarding zones during the lifetime of the Proposed Development, so any resource sterilisation that did occur would affect only small areas. On this basis, the receptor sensitivity is assigned as Low, as defined in Table 5.3 .	Low
Land (slope stability)	The presence of sub-vertical slopes within the Site has the potential to adversely affect the Proposed Development depending on the rock	Not applicable

Receptor/ Matter	Discussion	Sensitivity / Importance
	conditions on-site, the type of landslides that occurred on-site, where present, and their extent compared to the proposed infrastructure. It is not appropriate to consider slope stability features in terms of acting as a sensitive receptor (as noted in the guidance note on Environmental Impact Assessment for Geology and soils (DMRB, 2019)), but the topic is covered in this chapter, as requested by consultees, within Section 5.9: Geological Hazards .	
Soil quality	The quality of soil could be affected by work undertaken as part of the Proposed Development, with respect to soil composition or physical characteristics (i.e. due to introduction of contaminants [addressed in 'Land (potential contamination)', as detailed above] or in relation to soil structure). The soils within the Site have been classified as mineral soils which, for the majority of the Site, do not support any designated ecological sites (see the row relating to low sensitivity in Table 5.3). The exceptions to this are those soils within the SINC's present within the Site, the location of which are shown in ES Volume IV, Figure 10.1: Important Ecological Features Designates Sites where these sites would be medium sensitivity with respect to soil quality, as indicated in Table 5.3. The Site is identified to be a minor important or local pathway for water flows and flood risk management (for groundwater).	Medium or Low
Groundwater	Within the sandstone bedrock, the groundwater is classified as a Secondary A aquifer of high vulnerability. Depth of groundwater is unknown, but is expected to be variable	Medium

Receptor/ Matter	Discussion	Sensitivity / Importance
	due to the varying topography and different conditions with respect to overlying soils or superficial units. There are no SPZs within the Site. Based on Table 5.7 , the receptor is categorised as being of moderate quality, and is therefore assigned Medium importance. Consultation has indicated that the assessment should cover groundwater in terms of quality and quantity.	
Groundwater abstraction points	The closest identified groundwater abstraction point is located approximately 162 m off-site to the east, at WEPA, and is for industrial use. As this abstraction point is located down-gradient from the nearest point of the Site, it has been considered to be a potential receptor. As the water is used for an industrial purpose, this receptor is assigned Medium importance (as defined in the appropriate row of Table 5.7).	Medium

Future Baseline in the Absence of the Proposed Development

5.4.42 It is possible that the existing baseline conditions as described above may be subject to change in the future due to natural and human factors. Primarily, future baseline conditions may be influenced by climate change. The future climate impacts on land, soil and groundwater receptors associated with the Site could include changes in precipitation patterns and seasonality, groundwater quality and quantity, temperature and extreme weather events. These changes could have various impacts on the land, soil and groundwater of the area, including:

- Temperature changes can lead to changes in the rate of weathering and erosion of rocks and soils, as well as changes in the distribution of plants and animals that can impact erosion and sedimentation patterns;
- Changes in precipitation patterns can lead to changes in the availability of water resources, as well as changes in surface water flow and groundwater recharge. Fluvial and pluvial flooding events may increase in frequency and severity, although effects could be highly localised. Groundwater recharge could be affected by an increase in flash flooding or prolonged drought. High-intensity storms could lead to increased frequency in landslides and slope failures; and

- Changes in vegetation can impact erosion and sedimentation patterns. This may particularly affect wetland habitats if the availability of water decreases and ambient temperatures increase, raising evaporation rates.

5.4.43 In addition to this, it is possible that land / soils condition within the Site would deteriorate due to the continuation of current agricultural practices.

5.4.44 It is important to note that the future baseline is a projection, with a range of possible future conditions, and it is subject to uncertainty associated with the available projections. Across the lifetime of the Proposed Development, it is considered highly likely that the future baseline would be broadly comparable to the existing baseline described above.

5.5 Mitigation Embedded into the Design

5.5.1 This assessment has been based on the principle that measures have been 'embedded' into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement of infrastructure. The embedded mitigation relevant to this assessment is detailed in **Table 5.12**.

Table 5.12 Embedded Mitigation

Embedded Mitigation Measure Relevant to Land, Soils and Groundwater	Function
Internal access tracks and cable routes propose to use existing tracks, crossings and/or gaps in the hedgerows, where reasonably practicable.	To reduce disturbance to land, soil quality and the environment as far as reasonably practicable.

5.5.2 Additionally, whilst not an environmental receptor, the infrastructure has been located to avoid known mine entries.

5.6 Assessment of Likely Effects (without Additional Mitigation)

Construction

Land (Potential Contamination)

5.6.1 Construction activities could lead to new pollution events resulting from localised contamination of soils from potential spills during the operation of construction plant or refuelling activities.

5.6.2 Existing contamination present on the Site could be mobilised by construction activities if contaminated soils (e.g. made ground) associated with past uses are encountered during works. Existing contamination could form minor localised sources of contamination if not managed correctly. New pathways for the movement of existing contamination could be formed as a result of construction activities.

Land (Mineral Safeguarding)

- 5.6.3 The Site is predominantly within a mineral safeguarding zone for either sandstone or igneous rock (within BCBC). The potential for extraction of these minerals would be temporarily impacted during construction works. This would result in the temporary reduction in availability of mineral resources during life of Proposed Development (50 years), but these areas would be very localised.

Soil

- 5.6.4 Likely effects on chemical or physical properties of soil during construction could include compaction and deterioration of soil or introduction/remobilisation of contamination. Installation of cables and construction of temporary haul roads and construction compounds could result in soil displacement, affecting land quality, and potentially resulting in permanent changes to land quality if not appropriately managed. Access tracks and steep slopes within the Site are likely to be most susceptible to deterioration in physical structure of soil through erosion. Highly localised effects could occur where solar PV frames are driven into the ground. Some soils are more susceptible to structural damage from the use of machinery and vehicular activity, depending upon soil type, climate and wetness class. Damage to soil properties could occur over a large area if mitigation measures are not applied.

Groundwater (Quality and Quantity)

- 5.6.5 Construction activities (including piling activities (if required), earthworks, access tracks formation and excavation) could lead to minor damage to field drains, which may affect groundwater quality if contaminants enter the existing drainage regime and migrate into the groundwater through the geological units, affecting the water quality by introducing pollutants. Also, damage to field drains could affect the movement of water through the drainage system and into the aquifers, altering the speed of movement of water in the existing groundwater bodies, or the quantity of water present in different locations.
- 5.6.6 Spillages or leaks of fuels, oils and chemicals during construction works may lead to effects on shallow groundwater, which could result in potential pollution to any underlying aquifers due to lateral and vertical migration of leachable, dissolved, or free phase contaminants through pore spaces and fissures in geological units. This may also arise from migration of runoff associated with construction activities (e.g., silt runoff during earthworks and accidental spills and leaks from construction plant).
- 5.6.7 Where piling takes place, there may be the potential for preferential pathways to form to the underlying aquifer, particularly where spills or leaks have occurred. The quantity of groundwater present in the ground could also be affected by the Proposed Development, in terms of effects on field drains, surface water flows (with subsequent impacts on groundwater) or infiltration.

- 5.6.8 If dewatering activities are required in relation to construction works, these have the potential to impact groundwater quality and quantity/flow, which could have corresponding impacts on groundwater dependent terrestrial ecosystems (GWDTEs).
- 5.6.9 If minewater is encountered during works, there is the potential for contaminated minewater to be released into the wider groundwater body, or for new flow pathways to be created.

Groundwater (Abstraction Points)

- 5.6.10 The Proposed Development has the potential to adversely impact water quality in groundwater abstractions, if contamination is introduced or remobilised during construction works (see above).

Operation

Land (Potential Contamination)

- 5.6.11 Operational and maintenance activities could lead to localised contamination of soils from new contamination as a result of potential spills during the operation of plant used for maintenance activities or refuelling activities.
- 5.6.12 Operational and maintenance activities would not be expected to cause issues in relation to existing contamination. However, if any new work areas are required in a different location to those used during the construction phase e.g., during the replacement of solar PV, the mobilisation of existing contamination could occur through new pathways.

Soil

- 5.6.13 Likely adverse effects on chemical or physical properties of soil during operation could include compaction and deterioration of soil or introduction of contamination. Damage to soil properties could occur in areas where operational activities are undertaken, if mitigation measures are not applied.

Groundwater (Quality and Quantity)

- 5.6.14 Operational activities could lead to minor damage to field drains, spillages or leaks of fuels, oils and chemicals, which could lead to effects on groundwater due to migration of contamination through soil and geological units. Migration of runoff associated with operational activities could also occur.

Groundwater (Abstraction Points)

- 5.6.15 The Proposed Development has the potential to adversely impact water quality in groundwater abstractions, if contamination is introduced or remobilised during construction, operation or decommissioning works.

Decommissioning

Land (Potential Contamination)

- 5.6.16 Decommissioning activities could lead to the introduction of new contamination as a result of localised pollution of soils from potential spills from plant or refuelling activities.
- 5.6.17 Decommissioning activities would not be expected to cause issues in relation to existing contamination, however, if any new work areas are required in a different location to those used during the construction or operational phases, the mobilisation of existing contamination could occur.

Soil

- 5.6.18 Likely effects on chemical or physical properties of soil during decommissioning could include compaction and deterioration of soil or introduction of contamination. Damage to soil properties could occur over a large area if mitigation measures are not applied.

Groundwater (Quality and Quantity)

- 5.6.19 Decommissioning activities could lead to minor damage to field drains, spillages or leaks of fuels, oils and chemicals, which could lead to adverse effects on groundwater quality and quantity. If contaminants enter the existing drainage regime and migrate into the groundwater through the geological units, the water quality could be adversely affected by the presence of pollutants. Damage to field drains could affect the movement of water through the drainage system and into aquifers, altering the speed of travel of water in the existing groundwater bodies, or the quantity of water present in different locations.

Groundwater (Abstraction Points)

- 5.6.20 The Proposed Development has the potential to adversely impact water quality in groundwater abstractions, if contamination is introduced during decommissioning works.

5.7 Additional Mitigation Measures

- 5.7.1 Additional mitigation measures that will be adhered to, to protect receptors that are identified within this chapter are detailed below.
- 5.7.2 **ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan** (OCEMP) incorporates measures to manage and mitigate against adverse effects relating to groundwater, erosion of soils, adverse impacts due to new pollution events associated with the works, and impacts due to mobilisation of existing contamination. The OCEMP provides emergency procedures to ensure appropriate management of accidental spillages and leaks, as well as risks from any existing contaminated land. This document includes reference to the Environment Agency guidance documents relating to protection of groundwater.

- 5.7.3 The OCEMP would be developed into a detailed CEMP by the Principal Contractor. The detailed CEMP would be secured via a planning condition.
- 5.7.4 A summary of mitigation measures to be included within the detailed CEMP is provided below:
- An Emergency Response Plan will be developed to provide a framework for responding to environmental incidents and emergencies (these will relate to the potential introduction of new pollution due to the Proposed Development, as well as dealing with any locations where the project infrastructure is located in areas of existing contamination, both expected and unexpected. The plan will include measures to ensure that new pathways for mobilisation of existing contamination are not formed);
 - Good housekeeping and site maintenance will be required, including management of materials and waste;
 - Best practice measures will be adhered to in order to reduce pollution;
 - Records will be maintained relating to routine inspections, investigations, corrective actions and action schedules;
 - In locations where dewatering is required, this will be achieved in accordance with industry best practice and in line with NRW guidance, including Guidance for Pollution Prevention 5 (GPP5) (NRW, NIEA, SEPA, 2017). Any water would be disposed of / discharged in accordance with a NRW permit;
 - For any locations where it is proposed that push piling techniques will be used, a piling risk assessment may be required;
 - Where there is the potential for encountering minewater, measures will be put in place to manage the water, and to ensure that excavations are properly sealed so that new flow pathways are not formed into or out of mine workings; and
 - Where minewater discharges are present close to work areas for the Proposed Development, measures must be put in place to ensure that the discharges are not blocked or altered.
- 5.7.5 A ground investigation will be carried out prior to construction works commencing, which will be secured via condition. This ground investigation will provide data on geo-environmental and geotechnical issues, and would include groundwater monitoring (including in areas where springs are present, where these are located close to areas of proposed infrastructure, and including consideration of flow dynamics and depths). As agreed with NRW on the meeting held on 27 August 2025 (**ES Volume III, Appendix 5.5: Natural Resources Wales Meeting Notes (August 2025)**), the ground investigation will be targeted to focus on high risk construction areas (for example historical landfills or areas of colliery spoil) where infrastructure is proposed. If considered appropriate (depending on proximity to mining features), ground gas monitoring will also be integrated into the investigation (subject to agreeing the scope of work with the relevant consultees).

- 5.7.6 Should the ground investigation and associated risk assessment indicate that remediation of soil and / or groundwater contamination is required, this would be undertaken in advance of the construction works commencing. Any remediation works would be undertaken in accordance with a Remediation Strategy which would be submitted to, and approved by the relevant planning authority (BCBC or NPTC), pursuant to an appropriately worded planning condition. The Remediation Strategy would also be developed in consultation with NRW and would ensure that risks to human health and controlled waters are minimised to as low as reasonably practicable.
- 5.7.7 Similar measures to the construction phase would be incorporated into a Decommissioning Environmental Management Plan (DEMP), which would be secured via a planning condition. The DEMP would manage and mitigate against adverse effects relating to groundwater, erosion of soils and contaminated land during decommissioning activities. Key activities covered by the DEMP would include:
- Dismantling and removal of wind turbines, including breaking out the plinth and the top surface of the turbine foundations (to a depth of 1 m), and cutting off all cabling at the same depth.
 - Dismantling and removal of PVs and electrical equipment; and
 - Restoration of the turbine hardstandings and substation with a final layer backfilled with soil.
- 5.7.8 The DEMP will include:
- An Emergency Response Plan to provide a framework for responding to environmental incidents and emergencies (these will relate to the potential introduction of new pollution due to the Proposed Development, as well as dealing with any locations where the project infrastructure is located in areas of existing contamination, both expected and unexpected. The plan will include measures to ensure that new pathways for mobilisation of existing contamination are not formed);
 - Good housekeeping and site maintenance will be required, including management of materials and waste;
 - Best practice measures will be adhered to in order to reduce pollution; and
 - Records will be maintained relating to routine inspections, investigations, corrective actions and action schedules.
- 5.7.9 A Buried Cable Risk Assessment will be undertaken to determine any potential risks of retaining the below ground infrastructure upon decommissioning. This would be secured via a planning condition.
- 5.7.10 Measures to manage any potential impacts to soil during and on completion of the construction and decommissioning phases are outlined in **ES Volume III, Appendix 5.4: Outline Soil Management Plan** and would be secured by planning condition for a detailed Soil Management Plan. These measures will include the following:

- Requirements to avoid working in unsuitable conditions (as defined by the Plan);
- To utilise low ground pressure vehicles (tracked vehicles or vehicles fitted with tyres designed to operate at low inflation pressures) wherever possible;
- To install gravel access tracks early on to avoid unnecessary trafficking on agricultural soils, or use track matting where needed in the early phases of construction;
- Measures to follow for soil management including principles of best practice to maintain the physical properties of the soil;
- Identification of those areas within the Site which may be more susceptible to damage, for example, steep slopes;
- Definition of standard parameters to identify when soil conditions are suitable for handling or trafficking (qualities of the soil, for example when it is wet or after periods of heavy rainfall or high winds); and
- Outline measures and principles for soil management and best practice to maintain the physical properties of the soil, with the aim of maintaining the condition of the land until the end of the lifetime of the Proposed Development;
- Methods to ensure that soil profiles are reinstated in the same order as they were excavated; and
- Information to avoid compaction of soils.

5.8 Assessment of Residual Effects (with Additional Mitigation)

Construction

5.8.1 The residual effects of the Proposed Development on land, soils and groundwater during the construction phase are set out in **Table 5.13**.

Table 5.13 Assessment of Residual Effects during the Construction Phase

Paragraph number	Receptor / receptor groups	Description of impact	Magnitude of Impact / Change	Residual effect (with additional mitigation)
1	Land (potential contamination) Sensitivity: Low	Localised contamination of soils from potential spills during the operation of construction plant or refuelling activities would be minimised through preventative and responsive mitigation measures implemented through a detailed CEMP (outline measures set out in ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan). Potential risks from mobilisation of existing contamination will be dealt with by the targeted ground investigation (to be secured by condition) providing data on locations of contamination, followed by agreement on appropriate mitigation measures or remediation works. Potential risks from unexpected contamination will be managed by measures set out in ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan, which will also ensure that new pathways for mobilisation of existing contamination are not formed.	Negligible (the impacts are considered over the short-term for this phase, due to the 24 month programme)	Neutral or slight adverse Not significant

Paragraph number	Receptor / receptor groups	Description of impact	Magnitude of Impact / Change	Residual effect (with additional mitigation)
2	Land (mineral safeguarding) Sensitivity: Low	Temporary reduction in access to minerals for excavation purposes and very slight loss of resources in areas of excavation.	Minor	Neutral or slight adverse Not significant
3	Soil Sensitivity: Medium to Low	Compaction, deterioration or displacement of soil due to vehicle movements, earthworks and installation of infrastructure (specifically turbines and solar PV frames) during construction would be minimised as far reasonably practicable through the implementation of the detailed Soil Management Plan. Localised contamination of soils from potential spills during the operation of construction plant or refuelling activities would be minimised through preventative and responsive mitigation measures implemented through a detailed CEMP (outline measures set out in ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan).	Minor	Neutral or slight adverse Not significant
4	Groundwater (quality and quantity) Importance: Medium	Adverse impact due to leaks and spills, remobilising existing contamination (expected or unexpected), affecting groundwater flows due to damage to existing drainage, or changes to the current hydrogeological regime would be minimised through preventative and responsive mitigation measures and good site practice implemented through a detailed CEMP (outline measures set out in ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan).	Negligible	Neutral or slight adverse Not significant

Paragraph number	Receptor / receptor groups	Description of impact	Magnitude of Impact / Change	Residual effect (with additional mitigation)
		Potential for adverse impacts during earthworks and piling activities. Impacts due to dewatering activities, or interactions with minewater, will be minimised by the measures set out in the CEMP.		
5	Groundwater (abstraction points) Importance: Medium	Potential for adverse impacts during earthworks and piling activities. Adverse impact due to leaks and spills, remobilising existing contamination, affecting groundwater flows due to damage to existing drainage, or changes to the current hydrogeological regime due to piling would be minimised through preventative and responsive mitigation measures and good site practice implemented through a detailed CEMP (outline measures set out in ES Volume III, Appendix 2.1: Outline Construction Environmental Management Plan).	Negligible	Neutral or slight adverse Not significant

Operation

- 5.8.2 The residual effects of the Proposed Development on land, soils and groundwater during the operational phase are set out in **Table 5.14**.
- 5.8.3 It should be noted that the assessment of potential effects on groundwater for the operational phase has taken consideration of the contents of the 'Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change' (SoBRA, 2022). This document indicates a likely overall rise in precipitation in winter, coupled with a decline in precipitation in summer. This will be associated with a generally higher level (over a shorter time period) of groundwater recharge in winter, and a potentially higher risk of droughts. Given the topography of the Site, with sections of high elevation and steep slopes likely to demonstrate deeper groundwater, and areas at lower elevation with potentially shallower groundwater, it is considered that there may be the potential for groundwater in areas where it is already shallow to become even shallower when recharge levels are high. However, this does not affect the groundwater receptor importance, and the assigned importance of medium is still considered to be appropriate, based on the criteria presented in **Table 5.7**.

Table 5.14 Assessment of Residual Effects during the Operational Phase

Paragraph Number	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact / Change	Residual Effect (With Additional Mitigation)
1	Land (potential contamination) Sensitivity: Low	As the main activities occurring during the operational phase would be routine maintenance of the equipment, utilising agreed access routes and laydown areas, the potential effects on land due to contamination would be minimal. Vehicles would be well maintained such that leaks would be unlikely and in the unlikely situation that they did occur, they would be at a scale unlikely to create a discernible change.	Negligible (for this phase, consideration was made of the fact that the Proposed Development operational timespan is 50 years)	Neutral or slight adverse Not significant
2	Soil Sensitivity: Medium to Low	As the main activities occurring during the operational phase would be routine maintenance of the equipment, utilising agreed access routes and laydown areas, the potential effects on the properties of soils due to compaction would be minimal. Vehicles would be well maintained such that leaks would be unlikely and in the unlikely situation that they did occur, they would be at a scale unlikely to create a discernible change. Managed vegetation will be allowed to grow beneath the solar PV panels, which will avoid compaction of soils.	Minor (as for the land-based receptors, for the operational phase, consideration has been made of the fact that the timespan for the Proposed Development, although temporary, has the potential to result in greater impacts on soils over a 50 year operational period)	Slight adverse or Neutral or slight adverse Not significant

Paragraph Number	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact / Change	Residual Effect (With Additional Mitigation)
			than during the construction phase)	
3	Groundwater (quality and quantity) Importance: Medium	As the main activities occurring during the operational phase would be routine maintenance of the equipment, utilising agreed access routes and laydown areas, the potential effects on the properties of soils due to compaction would be minimal. Vehicles would be well maintained such that leaks would be unlikely and in the unlikely situation that they did occur, they would be at a scale unlikely to create a discernible change. Excavations and earthworks are unlikely to be required during the operational phase.	Negligible	Neutral or slight adverse Not significant
4	Groundwater (abstraction points) Importance: Medium	As the main activities occurring during the operational phase would be routine maintenance of the equipment, utilising agreed access routes and laydown areas, the potential effects on the properties of soils due to compaction would be minimal. Vehicles would be well maintained such that leaks would be unlikely and in the unlikely situation that they did occur, they would be at a scale unlikely to create a discernible change. Excavations and earthworks are unlikely to be required during the operational phase.	Negligible	Neutral or slight adverse Not significant

Decommissioning

5.8.4 The residual effects of the Proposed Development on land, soils and groundwater during the decommissioning phase are set out in **Table 5.15**.

Table 5.15 Assessment of Residual Effects during the Decommissioning Phase

Paragraph number	Receptor / receptor groups	Description of Impact	Magnitude of Impact / Change	Likely effect (with additional mitigation)
1	Land (potential contamination) Sensitivity: Low	Localised contamination of soils from potential spills during the operation of plant or refuelling activities would be minimised through preventative and responsive mitigation measures implemented through a DEMP.	Negligible	Neutral or slight adverse Not significant
2	Soil Sensitivity: Medium to Low	Compaction, deterioration or displacement of soil due to vehicle movements, earthworks and installation of dismantling and removal of infrastructure (specifically turbines and solar PV frames) during decommissioning would be minimised by the implementation of the detailed Soil Management Plan. Localised contamination of soils from potential spills during the operation of construction plant or refuelling activities would be minimised through preventative and responsive mitigation measures implemented through a detailed DEMP.	Minor	Neutral or slight adverse Not significant
3	Groundwater (quality and quantity) Importance: Medium	Adverse impact due to leaks and spills, remobilising existing contamination, affecting groundwater flows due to damage to existing drainage, or changes to the hydrogeological regime would be minimised through preventative and responsive mitigation measures and good site practice implemented through a detailed DEMP.	Negligible (short-term impacts considered for this phase)	Neutral or slight adverse Not significant

Paragraph number	Receptor / receptor groups	Description of Impact	Magnitude of Impact / Change	Likely effect (with additional mitigation)
4	Groundwater (abstraction points) Importance: Medium	Adverse impact due to leaks and spills, remobilising existing contamination, affecting groundwater flows due to damage to existing drainage, or changes to the hydrogeological regime would be minimised through preventative and responsive mitigation measures and good site practice implemented through a detailed DEMP.	Negligible	Neutral or slight adverse Not significant

5.9 Geological Hazards

Hazards Associated with Coal Mining

- 5.9.1 The Site lies within a Coal Mining Reporting Area and includes Development High-Risk areas. It is a requirement for High-Risk areas to prepare a desk based Coal Mining Risk Assessment to support planning applications.
- 5.9.2 Baseline information on coal mining is provided in **Sections 5.4.14 to 5.4.22**.
- 5.9.3 **ES Volume III, Appendix 5.2: Coal Mining Risk Assessment** concluded that there may be risks to buildings or infrastructure constructed as part of Site re-development and to end-users, due to the presence of mine entries and the possible underground working of shallow coal seams.
- 5.9.4 Methods for addressing potential hazards due to coal mining infrastructure should be defined in consultation with the MRA (formerly the Coal Authority). The first step in assessing the hazard will take the form of intrusive site investigation to determine exact locations of below ground features in areas where infrastructure is proposed. This would be done post-consent, with details subject to a planning condition.
- 5.9.5 Once identified and delineated, treatment of mine entries or shallow coal workings (if present) may be agreed to be necessary (depending on the location of the feature in relation to the Proposed Development infrastructure), which could include filling and/or capping mine shafts, adits or shallow coal workings. Consultation with the MRA, secured via a planning condition, will continue throughout these elements of work to enable the Proposed Development to be safely progressed, with approval and permits required for the engineering design phases to progress.
- 5.9.6 In addition to the physical hazards detailed above, the underlying Coal Measures units are considered a potential source of hazardous ground gas and shallow workings and mine entries can provide preferential migration pathways. Depending on the location of Proposed Development infrastructure in relation to coal mining legacy features, it is possible that a ground gas risk assessment will be required as part of the works to facilitate the Proposed Development. The details of such a phase of work would need to be agreed by the local authority and the MRA. The findings of any hazardous ground gas risk assessment (if deemed to be necessary), secured via a planning condition, will determine any subsequent phases of work.

Hazards Associated with Slope Instability

- 5.9.7 Based on the BGS maps (British Geological Survey, 2025), the geology on-site comprises mainly sandstone with subordinate interbedded mudstone/siltstone and seatearth with coal seams. The sandstone beds are dipping to the north and north-north-east at an angle of 18° to 26°, as based on the BGS map. Few faults are present on-site, oriented approximately north to south and north-north-east to south-south-west.

- 5.9.8 It is anticipated that typical landslides into rock include toppling, rock slide and rock falls. It is considered that the steep slope may be affected by one or more of these rock landslide types. Localised debris flow involving rock may also be present in the superficial layers of the slope, where the bedrock is highly weathered.
- 5.9.9 Further to the assessment completed with respect to slope stability, a risk assessment would be undertaken for the Site as part of the engineering design phase. The risk assessment aims to identify areas which have already failed or with the potential to undergo a slope failure near to the locations of the Proposed Development infrastructure. The slope stability risk assessment will be undertaken at selected locations, which are to be determined once the Proposed Development micro-siting layout has been finalised and based on the site conditions of the precipitous slopes within rock or strongly inclined within artificial deposits, such as colliery spoil deposits, if present.
- 5.9.10 The suggested methodology for this slope stability risk assessment will include a review of all available information: locations of the potential landslide from the environmental databases and the BGS maps about the proposed positions of the solar PV farm areas and the wind turbines. The substation location has been located within a level area, so will not require further assessment in this respect.
- 5.9.11 Detailed information on the five landslides reported by the BGS GeoIndex website is expected to be included within BGS maps, special reports on landslip survey, where available, and Memoires of the Geological Survey in the UK. Local media articles and local authority reports may also contain relevant information, where available.
- 5.9.12 Available lidar images will provide an overview of the Site slope about the elevation and morphology, where information is available, hillshade map and a greyscale slope angle plan.
- 5.9.13 Following the desk study review of the available data, a Site walkover will be required. The Site walkover will target the areas of the Proposed Development (wind turbine locations and solar PV farm areas) which may potentially be affected by slope instability: the Site areas visited will be informed by the Proposed Development infrastructure locations and preliminary desk-based assessment.
- 5.9.14 The Site walkover will collect information on the geology, bedding, joint survey and any evidence of landslides, which will be used for the slope stability risk assessment. The visit to the areas of the Proposed Development may be restricted by the presence of vegetation or sub-vertical unsafe slopes.
- 5.9.15 Information will be obtained on the engineering properties of the rock types on-site post-consent, as part of an intrusive site investigation, which will be secured via a planning condition. Information relating to rock properties, as required, will be obtained from the available literature.

- 5.9.16 Based on the findings of the slope stability modelling and risk assessment, recommendations will be provided about the Proposed Development. Recommendations may include advice, if applicable, on suitable types of remediation for slopes such as those present at the Site.

5.10 Opportunities for Environmental Enhancement

- 5.10.1 If contamination is encountered during intrusive investigation works, there may be a need to develop a remedial strategy (in agreement with the local authority via a planning condition). If remediation of existing contamination is necessary to facilitate redevelopment works, this could result in an enhancement of the environment with respect to land or groundwater receptors which are already experiencing an effect from a potentially hazardous source of contamination.
- 5.10.2 If there is a requirement to undertake remedial works to deal with existing contamination prior to the Proposed Development being constructed, consideration should be given as to whether there could be additional enhancement afforded to the environment as part of these works.

5.11 Difficulties and Uncertainties

- 5.11.1 The following difficulties and uncertainties have been encountered during the undertaking of this assessment:
- Data on Site history have been obtained from historical maps. On some occasions, historical information may not be available due to gaps between historical Ordnance Survey maps and there may be developments that occurred between map editions that are not evident. However, for this Site, there are few changes to features between the subsequent map editions, and it is considered unlikely that significant features have been missed;
 - Due to the large area of the Site, the walkover provided an overview, rather than a detailed assessment. This is standard for obtaining the level of detail required to complete **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**, and does not adversely affect the assessment. The data from the walkover survey is augmented by reviewing aerial imagery for the Site, along with other data sources (as detailed in **ES Volume III, Appendix 5.1: Preliminary Risk Assessment**);
 - There are no previous investigations available for the Site; therefore, there is no specific information on concentrations of potential contaminants in soil and groundwater. It would be standard for this information to be collected during later phases of the project, when site investigations can be appropriately designed for the Proposed Development based on the available desk-based information and engineering designs. There is no adverse impact on the robustness of this assessment as a result of this situation, as the assessment draws on information from a variety of sources to present a conservative approach to the potential risks, which are investigated further at later phases of the Proposed Development (mainly as

a result of the intrusive investigation that will be undertaken to assess contamination, as appropriate); and

- Details of groundwater depth and flow direction are unknown. Although this means that the exact details of the groundwater regime are unknown, the assessment has been completed in a robust manner based on assumptions made from the available data. As for the note above, these elements can be investigated further if needed as part of the intrusive investigation works.

5.12 Inter-Project Cumulative Effects

5.12.1 This section considers the combined effects of the Proposed Development and other projects on receptors that are assessed within this chapter.

Screening Cumulative Developments within the Zone of Influence

5.12.2 The inter-project cumulative effects assessment has been undertaken in accordance with Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024), as set out in **ES Volume II, Chapter 4: Approach to the EIA. Table 5.16** sets out the other (cumulative) developments located within 1 km of the Site. This Zone of Influence (Zol) has been determined as appropriate for this cumulative assessment as it will allow consideration of any other developments which are either operational, consented or in construction, and that are close enough to have a potential effect that interacts with the Proposed Development. Any other developments at a greater distance than 1 km from the Site boundary would not be expected to result in an inter-project cumulative effect.

5.12.3 **Table 5.16** sets out the other developments identified within the Zol and also sets out the findings of a screening assessment undertaken to identify whether those developments have the potential to result in significant effects in combination with the Proposed Development.

Table 5.16 Inter-Projects Cumulative Effects: Screening

Other development	Development description	Potential for significant cumulative effects?
CAS-02505-N3T6M4 Foel Trawsnant Windfarm Connection	66 kV electricity network infrastructure comprising overhead lines and underground cables	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant cumulative effects are anticipated
DNS CAS-03613-S7Y6S4 Prosiect Egni Glan Llynfi (Modular Nuclear)	Four PWR-20 Modular Nuclear Reactor units, which will provide clean, carbon-free baseload electricity and heat to local industrial users. There	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant cumulative effects are anticipated

Other development	Development description	Potential for significant cumulative effects?
	will also be Grid, as well as private electricity & steam connections. There will be no air or water emissions from the plant.	
P/24/753/SOR WEPA Vesta (Paper Machine)	New plant producing tissue paper at Bridgend	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant effects are anticipated
CAS-01977-L5K6R7 Eirlys Solar PV Farm	Solar PV development	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant effects are anticipated
P/16/128/FUL Quarry restoration - Former Margam Surface Mine	Alternative restoration and aftercare scheme including pumping, earthworks, soil relocation	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant effects are anticipated
P/20/289/FUL Waste - Waste storage	Erection of Zappshleter tensile roof system mounted on shipping containers	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant effects are anticipated
P/20/119/FUL (P/23/185/DOC) WEPA Vesta (Paper Machine)	Expansion of current operation including an extension, new facilities and ancillary buildings	No With mitigation measures in place for the Proposed Development and for the other development, any effects will be minimised and no significant effects are anticipated

Assessment

- 5.12.4 Based on the screening exercise provided in **Table 5.16**, no likely significant effects have been identified with respect to land, soil or groundwater receptors. As a result, no additional mitigation is proposed relating to cumulative effects.

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