Foel Fach Wind Farm Limited.

Foel Fach Wind Farm - Environmental Statement Volume III

Appendix 7.3: Water Framework Directive Assessment

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EXECUTIVE SUMMARY

A Water Framework Directive (WFD) Assessment has been undertaken to assess the potential impacts the Proposed Development could have on waterbodies or protected areas. The assessment considers hydrological data, WFD classification status of surface and groundwater bodies and any protected waterbodies potentially affected by the Proposed Development. It identifies and evaluates the potential impacts of construction and operation on the hydromorphological, water quality, biological and chemical status of the waterbodies. Where a risk of deterioration in waterbody status is identified as a result of the Proposed Development, the assessment provides recommendations to avoid or mitigate adverse impacts. The Proposed Development is concluded to not cause deterioration or prevent the waterbodies and protected areas from meeting their objectives as it has been designed to avoid adverse impacts and, where these are unavoidable, comprehensive mitigation and monitoring measures have been proposed to prevent adverse impacts. It is therefore concluded that, with the implementation of the best practice construction and mitigation measures proposed, the Proposed Development is compliant with the WFD regulations.

1 INTRODUCTION

1.1 Introduction

1.1.1 This report provides a Water Framework Directive (WFD) Assessment for Foel Fach Wind Farm (hereafter referred to as the 'Proposed Development') and associated development infrastructure.

1.1.2 This report forms an Appendix to the Environmental Statement (ES) for the Proposed Development and should be read in conjunction with the **ES Volume II, Chapter 7: Land, Soils and Water, ES Volume IV Figure 7.6 Hydrological Catchments and Watercourses** and **ES Volume IV Figure 7.8 Designated Sites**. It has been produced to determine whether the Proposed Development is compliant with the objectives of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (UK Government, 2017). This is to ensure that the Proposed Development does not result in any deterioration of the water quality status of waterbodies protected under the WFD Regulations.

1.2 Site Location

1.2.1 The Application Site ('Site') is located within the administrative boundary of Gwynedd Council, North Wales, approximately 3.1 km north east of Bala. Eryri National Park is situated to the west of the Site, with the nearest turbine (T01) located approximately 1.9 km east of the national park boundary. The Site elevation varies from approximately 225 metres (m) Above Ordnance Datum (AOD) to approximately 550 m AOD. The majority of the Site is located on an area of grazing moorland with a number of parcels of registered common land. Two registered common land parcels are located in the eastern area of the Site. The majority of the land within the Site is Countryside and Rights of Way Open Access land, with areas of agricultural land. A number of Public Rights of Way (PRoW) are present within and adjacent to the Site, although none are nationally designated trails. Small wooded areas are present within the Site. Ancient woodland and larger areas of forestry are present outside the application boundary, to the south.

1.3 Development Proposals

1.3.1 The Proposed Development infrastructure will include:

- 10 no. three bladed horizontal axis wind turbines, up to 200 or 220 metres in height to the blade tip (where specified)
- wind turbine foundations and hardstanding areas which will include crane pad hardstanding areas and laydown/storage areas

- an onsite substation
- a battery energy storage system (BESS)
- permanent wind monitoring equipment (LiDAR)
- site access improvements, through the upgrading of the existing junction off the B4501
- onsite access tracks (new roads and upgraded existing roads/tracks), passing places and vehicle turning heads
- underground power cables linking the wind turbines and the substation
- watercourse crossings and associated infrastructure
- drainage system
- micrositing up to 50 m

  onsite signage, and
- biodiversity enhancements proposals.

1.3.2 Full details of the Proposed Development design are provided in **ES Volume II, Chapter 2: Description of the Proposed Development**.

1.3.3 This WFD compliance assessment relates to the construction, operational and decommissioning phases of the Proposed Development. Effects during the construction and decommissioning phases are similar and have been assessed together.

1.4 Aims

1.4.1 This report aims to undertake a review of available relevant hydrological information and catchment data, including the WFD classification status of any WFD surface and groundwater bodies as well as protected waterbodies potentially affected by the Proposed Development. The assessment identifies and evaluates the potential for impacts on WFD waterbodies during the construction, operational and decommissioning phases of the Proposed Development, particularly in relation to hydromorphological, water quality, biological and chemical status elements. Where a risk of deterioration in waterbody status from the Proposed Development is identified, the assessment provides recommendations to avoid or mitigate adverse impacts.

1.5 Assessment Method

1.5.1 The assessment has involved the following stages:

- Desk study;
- Hydrological walkover survey and data collection;
- Waterbodies mapping; and
- Assessment and reporting, separated into the following sections:
  - Screening;
  - Scoping; and
  - Detailed assessment.

2 WFD WATERBODIES

2.1 Screening of WFD Waterbodies

2.1.1 A WFD screening has been undertaken to determine if WFD waterbodies may be affected by the Proposed Development. The screening stage identifies several water bodies that may be affected by the Proposed Development as shown in NRW Water Watch Wales (NRW, 2025) as follows:

- Two WFD surface waterbodies
- One designated waterbody (designated as a Special Area of Conservation and a Site of Special Scientific Interest)
- One ordinary waterbody, and
- One WFD groundwaterbody.

2.1.2 The Afon Meloch (WFD surface waterbody) is screened in for further assessment. The Afon Meloch is located in the central-eastern section of the Site and various proposed infrastructure elements including turbines and crane hardstandings are located within its catchment area. There are also two proposed watercourse crossings on tributaries to the Afon Meloch. There is potential impact from these works to have an impact on the waterbody.

2.1.3 The Afon Mynach (WFD surface waterbody) is screened in for further assessment. The Afon Mynach is located immediately west of the Proposed Development, outside the application boundary, and the western section of the Site is located within its catchment area. The main Site access track, entrance construction compound, watercourse crossings and the borrow pit are all within the Afon Mynach catchment. There is potential for these works to have an impact on the waterbody.

2.1.4 The Afon Dyfrdwy a Llyn Tegid Special Area of Conservation (SAC) and the Afon Dyfrdwy Site of Special Scientific Interest (SSSI) are screened in for further assessment. NRW's Wales Environmental Information Portal (NRW, 2025) indicates that the SAC and SSSI designated areas include the Afon Mynach main stem, which is the receiving waterbody for the western part of the Site.

2.1.5 Llyn Maen Bras is screened in for further assessment. Llyn Maen Bras is a small waterbody located within the southern application boundary and its tributaries provide drainage for the central southern part of the Site. It has a small hydroelectric scheme associated with it, fed by the reservoir. Potential impacts to this waterbody could arise from groundworks at the substation, T01 and its associated hardstanding, and sections of access track. Although not identified as a WFD waterbody, Llyn Maen Bras is legally protected from pollution as stipulated in NRW's Guidance Note GN078, Complying with the WFD Regulations 2017 (NRW, 2017).

2.1.6 The Dee Silurian/Ordovician groundwaterbody, a protected drinking water area (NRW, 2025), is screened in for further assessment. The Site lies entirely within this groundwaterbody's catchment area. There is potential for impacts to this groundwaterbody from changes to groundwater flow paths, restrictions to water infiltration and reduction in water quality arising from pollution incidents.

2.1.7 Minor watercourses and tributaries within the Site have been screened out of specific further assessment as they are located mainly within the catchment areas relating to the Afon Mynach, Afon Meloch or Llyn Maen Bras and impacts will be identified and addressed as part of these assessments.

2.1.8 Other watercourses which are not at risk from the Proposed Development are also screened out as there is very limited potential for any impact.

2.1.9 The impacts of the Proposed Development on the water environment have been assessed in **ES Volume II, Chapter 7: Land, Soils and Water.**

2.1.10 The baseline for the WFD waterbodies and other waterbodies within the Site is provided in **Table 7.3.1**.

Table 7.3.1 Waterbody Baseline – WFD River Waterbodies Cycle 3 (Welsh Government, 2024) and WFD Groundwaterbodies Cycle 3 (Welsh Government, 2023)

Waterbody ID	Waterbody name	Waterbody type	HMWB	Overall waterbody status	Biology (fish)	Morphology status	Relevance to the proposal
GB111067051960	Meloch	River	No	Good	Good	Not high	Hydrologically linked – potential risk
GB111067051990	Mynach	River	No	Moderate	High	Not high	Hydrologically linked – potential risk
N/A	Afon Dyfrdwy a Llyn Tegid/ River Dee and Bala Lake SAC Afon Dyfrdwy SSSI	River	No	Moderate	High	Not high	Hydrologically linked – potential risk
N/A	Llyn Maen Bras	Lake	No	Assumed to be good	Assumed to be good	Good	Hydrologically linked – potential risk
GB41102G200200	Dee Silurian/ Ordovician	Groundwater	N/A	Good	N/A	N/A	Within the Site

2.3 Risk Screening

2.3.1 A risk screening for each of the waterbodies identified above which have potential risk of impact from the Proposed Development is provided below.

Table 7.3.2 Risk Screening Table for Meloch

Waterbody name: Meloch		**Waterbody ID: GB111067051960**	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.1	Is the proposal in a waterbody at high status or high status for morphology or hydromorphology? (**Yes** – go to Stage 2 scoping and complete detailed assessment for each waterbody **No** – go to Q1.2)	Excavation of turbine foundations and hardstandings	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
Q1.2	Is the proposed activity listed a low risk activity? Complete new row for each activity (Yes – go to Q1.3 No – complete Stage 2 scoping assessment for each waterbody)	Excavation of turbine foundations and hardstandings	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**

Table 7.3.3 Risk Screening Table for Mynach

Waterbody name: Mynach		Waterbody ID: GB111067051990	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.1	Is the proposal in a waterbody at high status or high status for morphology or hydromorphology? (**Yes** – go to Stage 2 scoping and complete detailed assessment for each waterbody **No** – go to Q1.2)	Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit excavation	**No**
Q1.2	Is the proposed activity listed a low risk activity? Complete new row for each activity (**Yes** – go to Q1.3 **No** – complete Stage 2 scoping assessment for each waterbody)	Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit creation	**No**

Table 7.3.4 Risk Screening Table for Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI		Waterbody ID: N/A	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.1	Is the proposal in a waterbody at high status or high status for morphology or hydromorphology? (**Yes** – go to Stage 2 scoping and complete detailed assessment for each waterbody **No** – go to Q1.2)	Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit creation	**No**

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI		Waterbody ID: N/A	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.2	Is the proposed activity listed a low risk activity? Complete new row for each activity (**Yes** – go to Q1.3 **No** – complete Stage 2 scoping assessment for each waterbody)	Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit creation	**No**

Table 7.3.5 Risk Screening Table for Llyn Maen Bras

Waterbody name: Llyn Maen Bras		Waterbody ID: N/A	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.1	Is the proposal in a waterbody at high status or high status for morphology or hydromorphology? (**Yes** – go to Stage 2 scoping and complete detailed assessment for each waterbody **No** – go to Q1.2**)**	Excavation of turbine foundations and hardstandings	**No**
		Construction of substation	**No**
		Construction of access tracks	**No**
		Construction of batching compound	**No**
Q1.2	Is the proposed activity listed a low risk activity? Complete new row for each activity (**Yes** – go to Q1.3 **No** – complete Stage 2 scoping assessment for each waterbody)	Excavation of turbine foundations and hardstandings	**No**
		Construction of substation	**No**
		Construction of access tracks	**No**
		Construction of batching compound	**No**

Table 7.3.6 Risk Screening Table for Dee Silurian/Ordovician Groundwater Drinking Water Protected Area

Waterbody name: Dee Silurian/Ordovician Groundwater Drinking Water Protected Area		Waterbody ID: GB41102G200200	
Question number	**Risk screening questions**	**Name of activity**	**Screening decision**
Q1.1	Is the proposal in a waterbody at high status or high status for morphology or hydromorphology? (**Yes** – go to Stage 2 scoping and complete detailed assessment for each waterbody **No** – go to Q1.2)	Excavation of turbine foundations and hardstandings	**No**
		Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit creation	**No**
Q1.2	Is the proposed activity listed a low-risk activity? Complete new row for each activity (**Yes** – go to Q1.3 **No** – complete Stage 2 scoping assessment for each waterbody)	Excavation of turbine foundations and hardstandings	**No**
		Construction of construction compound	**No**
		Construction of access tracks	**No**
		Construction of watercourse crossing structures	**No**
		Borrow pit creation	**No**

2.4 Scoping

2.4.1 The scoping stage assesses the potential impacts of the Proposed Development on WFD waterbody receptors. These receptors include hydromorphology, water quality, and biology, and are evaluated to determine the significance of any potential environmental effects.

2.4.2 For each waterbody identified as requiring further assessment through the initial screening stage, the potential impacts on the three receptors are examined in greater detail. The assessment considers both direct and indirect impacts arising from construction and operational activities associated with the development. Where applicable, embedded avoidance or mitigation measures included in the project design are also described.

Table 7.3.7 Scoping Table for River and Lake Water Bodies - Meloch

Waterbody name: Meloch			**Waterbody ID: GB111067051960**
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Rivers and Lake waterbodies	Direct – risk of direct impact	All construction works involving earthworks will generate loose sediment, which could potentially enter surface watercourses and waterbodies through entrainment in surface runoff. This could have an adverse effect downstream via damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels, as well as potentially increasing flood risk.	Surface water from the areas surrounding turbine bases, hardstanding areas and borrow pit will be prevented from entering working areas by appropriate use of peripheral bunding and cut-off drains. These will help to divert clean water around and away from working areas. Details will be set out in the Surface Water Management Plan for the Site (to be prepared prior to construction and secured by planning condition). Earth bunds will be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months will be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures will be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage will provide an additional level of sediment control.

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, will have appropriate sediment control measures established prior to groundworks. Vegetation will be retained along watercourse banks to act as additional protection. Minor in-stream works may be required for some watercourse crossings or drainage areas, particularly if culvert replacement or upgrade is required. If required, this work will be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping will only be used if flow conditions require it. Crossings will avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, will retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Construction activities will be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions will be applied to guide construction activity (CH2M & Fairhurst, 2018): • high intensity rainfall-rainfall during construction greater than 10 mm per hour

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			• long duration rainfall-rainfall in the preceding 24 hours greater than 25 mm • 7-day cumulative rainfall (1)-preceding 7 days of rainfall greater than 50% of the monthly average • 7-day cumulative rainfall (2)-preceding 7 days of rainfall greater than 50 mm. Any water collecting within excavations will be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This will be undertaken at designated treatment locations within the Site and water from deep excavations will be tested to ensure appropriate quality prior to discharge; details will be provided in the Construction Environmental Management Plan (CEMP). Vegetation cover will be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of biodegradable geotextile, will be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the Environmental Clerk of Works (ECoW).
Hydromorphology **Hydromorphology includes both 'hydrology' and 'geomorphology' and describes the physical characteristics and processes of a**			

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
waterbody. **Could the proposal lead to changes in:**			
• quality and dynamics of water flow • connection to groundwater bodies • river continuity or residence time for lakes • river/lake depth and width variation • structure and substrate of the river/lake bed • structure of the riparian zone/lake shore	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity.	The proposed measures outlined above will be implemented to prevent any adverse effects on the hydromorphology of the WFD waterbody.
Is the proposal in a HMWB?	No		
Water quality **An activity can modify the flow of water, introduce artificial materials or remove sediment and/or vegetation. These can all affect**			

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
the water quality – particularly physico-chemical aspects of water quality - such as levels of dissolved oxygen, nutrients and ammonia. Include water quality in the detailed assessment if the activity could affect:			
• water clarity (turbidity or suspended particulate matter concentration) • temperature • oxygen levels • nutrients: total phosphorus concentration (Lakes); soluble reactive phosphorus concentration (Rivers). • salinity/conductivity • acidification status	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the water quality of the WFD waterbody.
Chemicals A detailed assessment will also be required if the activity uses or releases chemicals, for example, through sediment disturbance			

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
or building works. **This is necessary when either the:**			
• chemicals are on the Environmental Quality Standards Directive (EQSD) list (GOV UK, 2016). • or, if the activity releases chemicals on the EQSD list (GOV UK, 2025) and has a mixing zone, like a discharge pipeline or outfall, follow the Environment Agency's surface water pollution risk assessment guidance (GOV UK, 2025). This is part of the Environmental Permitting Regulations	N/A	No chemicals on the EQSD list will be used or released.	

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
guidance (NRW, 2025).			
Biology **Identify if the activity or project could impact on the abundance or composition of the following biological elements: benthic invertebrates, phytoplankton, macrophytes and phytobenthos or fish.** **Could the proposal lead to:**			
• changes to the composition and abundance of aquatic flora, and/or; • changes to the composition and abundance of benthic invertebrate fauna?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the WFD waterbody.
Fish fauna: could the proposal lead to:			

Waterbody name: Meloch			Waterbody ID: GB111067051960
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
• changes to the composition, abundance and age structure of fish fauna, • an impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, vibration, chemical change or a change in habitat, depth or flow), • entrainment or impingement of fish, • refuge/predation areas?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies. Installation of watercourse crossing structures could provide a barrier to fish migration.	The proposed measures outlined above will be implemented to prevent any adverse effects on the fish fauna of the WFD waterbody.

Table 7.3.8 Scoping Table for River and Lake Water Bodies - Mynach

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Rivers and Lake waterbodies	Direct – risk of direct impact	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on downstream waterbodies through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels, as well as potentially increasing downstream flood risk.	Surface water from the areas surrounding turbine bases, hardstanding areas and borrow pit will be prevented from entering working areas by appropriate use of peripheral bunding and cut-off drains. These will help to divert clean water around and away from working areas. Earth bunds will be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months will be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures will be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage will provide an additional level of sediment control. All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, will have appropriate sediment control measures established prior to groundworks. Vegetation will be retained along watercourse banks to act as additional protection. Minor in-stream works may be required for some watercourse crossings or drainage areas, particularly if

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			culvert replacement or upgrade is required. If required, this work will be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping will only be used if flow conditions require it. Crossings will avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, will retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Construction activities will be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions will be applied to guide construction activity (CH2M & Fairhurst, 2018): • high intensity rainfall-rainfall during construction greater than 10 mm per hour • long duration rainfall-rainfall in the preceding 24 hours greater than 25 mm • 7-day cumulative rainfall (1)-preceding 7 days of rainfall greater than 50% of the monthly average

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			• 7-day cumulative rainfall (2)-preceding 7 days of rainfall greater than 50 mm. Any water collecting within excavations will be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This will be undertaken at designated treatment locations within the Site and water from deep excavations will be tested to ensure appropriate quality prior to discharge; details will be provided in the CEMP. Vegetation cover will be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of biodegradable geotextile, will be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the ECoW.
Hydromorphology **Hydromorphology includes both 'hydrology' and 'geomorphology' and describes the physical characteristics and processes of a waterbody.** **Could the proposal lead to changes in:**			
• quality and dynamics of water flow	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to	The proposed measures outlined above will be implemented to prevent any adverse effects on the hydromorphology of the WFD waterbody.

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
• connection to groundwater bodies • river continuity or residence time for lakes • river/lake depth and width variation • structure and substrate of the river/lake bed • structure of the riparian zone/lake shore		surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity.	
Is the proposal in a HMWB?	No		

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Water quality **An activity can modify the flow of water, introduce artificial materials or remove sediment and/or vegetation. These can all affect the water quality – particularly physico-chemical aspects of water quality - such as levels of dissolved oxygen, nutrients and ammonia.** **Include water quality in the detailed assessment if the activity could affect:**			
• water clarity (turbidity or suspended particulate matter concentration) • temperature • oxygen levels • nutrients: total phosphorus concentration (Lakes); soluble reactive phosphorus concentration (Rivers). • salinity/conductivity • acidification status	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the water quality of the WFD waterbody.

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Chemicals **A detailed assessment will also be required if the activity uses or releases chemicals, for example, through sediment disturbance or building works.** **This is necessary when either the:**			
• chemicals are on the Environmental Quality Standards Directive (EQSD) list (GOV UK, 2016) • or, if the activity releases chemicals on the EQSD list (UK GOV, 2025) and has a mixing zone, like a discharge pipeline or outfall, follow the Environment Agency's surface water pollution risk assessment guidance (GOV UK, 2025). This is part of	N/A	No chemicals on the EQSD list will be used or released.	

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
the Environmental Permitting Regulations guidance (NRW, 2025).			
Biology **Identify if the activity or project could impact on the abundance or composition of the following biological elements: benthic invertebrates, phytoplankton, macrophytes and phytobenthos or fish.** **Could the proposal lead to:**			
• changes to the composition and abundance of aquatic flora, and or; • changes to the composition and abundance of benthic invertebrate fauna?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the WFD waterbody.

Waterbody name: Mynach Waterbody ID: GB111067051960			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Fish fauna **Could the proposal lead to:**			
• changes to the composition, abundance and age structure of fish fauna, • an impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, vibration, chemical change or a change in habitat, depth or flow), • entrainment or impingement of fish, • refuge/predation areas?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies. Installation of watercourse crossing structures could provide a barrier to fish migration.	The proposed measures outlined above will be implemented to prevent any adverse effects on the fish fauna of the WFD waterbody.

Table 7.3.9 Scoping Table for River and Lake Water Bodies - Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Rivers and Lake waterbodies	Direct – risk of direct impact	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on downstream waterbodies through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels, as well as potentially increasing downstream flood risk.	Surface water from the areas surrounding turbine bases, hardstanding areas and borrow pit will be prevented from entering working areas by appropriate use of peripheral bunding and cut-off drains. These will help to divert clean water around and away from working areas. Earth bunds will be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months will be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures will be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage will provide an additional level of sediment control. All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, will have appropriate sediment control measures established prior to groundworks. Vegetation will be retained along watercourse banks to act as additional protection.

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			Minor in-stream works may be required for some watercourse crossings or drainage areas upstream of the SSSI, particularly if culvert replacement or upgrade is required. If required, this work will be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping will only be used if flow conditions require it. Crossings will avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, will retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Construction activities will be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions will be applied to guide construction activity (CH2M & Fairhurst, 2018): • high intensity rainfall-rainfall during construction greater than 10 mm per hour • long duration rainfall-rainfall in the preceding 24 hours greater than 25 mm

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			• 7-day cumulative rainfall (1)-preceding 7 days of rainfall greater than 50% of the monthly average • 7-day cumulative rainfall (2)-preceding 7 days of rainfall greater than 50 mm. Any water collecting within excavations will be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This will be undertaken at designated treatment locations within the Site and water from deep excavations will be tested to ensure appropriate quality prior to discharge; details will be provided in the CEMP. Vegetation cover will be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of biodegradable geotextile, will be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the ECoW.

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Hydromorphology **Hydromorphology includes both 'hydrology' and 'geomorphology' and describes the physical characteristics and processes of a waterbody.** **Could the proposal lead to changes in:**			
• quality and dynamics of water flow • connection to groundwater bodies • river continuity or residence time for lakes • river/lake depth and width variation • structure and substrate of the river/lake bed • structure of the riparian zone/lake shore	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity.	The proposed measures outlined above will be implemented to prevent any adverse effects on the hydromorphology of the WFD waterbody.
Is the proposal in a HMWB?	No		

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Water quality **An activity can modify the flow of water, introduce artificial materials or remove sediment and/or vegetation. These can all affect the water quality – particularly physico-chemical aspects of water quality - such as levels of dissolved oxygen, nutrients and ammonia.** **Include water quality in the detailed assessment if the activity could affect:**			
• water clarity (turbidity or suspended particulate matter concentration) • temperature • oxygen levels • nutrients: total phosphorus concentration (Lakes); soluble reactive phosphorus concentration (Rivers). • salinity/conductivity • acidification status	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the water quality of the WFD waterbody.

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Chemicals **A detailed assessment will also be required if the activity uses or releases chemicals, for example, through sediment disturbance or building works.** **This is necessary when either the:**			
• chemicals are on the Environmental Quality Standards Directive (EQSD) list (GOV UK, 2016) • or, if the activity releases chemicals on the EQSD list (GOV UK, 2025) and has a mixing zone, like a discharge pipeline or outfall, follow the Environment Agency's surface water pollution risk assessment guidance (GOV UK, 2025). This is part of	N/A	No chemicals on the EQSD list will be used or released.	

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
the Environmental Permitting Regulations guidance (NRW, 2025).			
Biology **Identify if the activity or project could impact on the abundance or composition of the following biological elements: benthic invertebrates, phytoplankton, macrophytes and phytobenthos or fish.** **Could the proposal lead to:**			
• changes to the composition and abundance of aquatic flora, and or; • changes to the composition and abundance of benthic invertebrate fauna?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the WFD waterbody.

Waterbody name: Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Fish fauna **Could the proposal lead to:**			
• changes to the composition, abundance and age structure of fish fauna, • an impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, vibration, chemical change or a change in habitat, depth or flow), • entrainment or impingement of fish, • refuge/predation areas?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies. Installation of watercourse crossing structures upstream of the SSSI could provide a barrier to fish migration.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the WFD waterbody.

Table 7.3.10 Scoping Table for River and Lake Waterbodies - Llyn Maen Bras

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Rivers and Lake waterbodies	Direct – risk of direct impact	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on downstream waterbodies through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels, as well as potentially increasing downstream flood risk.	Surface water from the areas surrounding turbine bases, hardstanding areas and borrow pit will be prevented from entering working areas by appropriate use of peripheral bunding and cut-off drains. These will help to divert clean water around and away from working areas. Earth bunds will be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months will be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures will be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage will provide an additional level of sediment control. All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, will have appropriate sediment control measures established prior to groundworks. Vegetation will be retained along watercourse banks to act as additional protection. Minor in-stream works may be required for some watercourse crossings or drainage areas, particularly if

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			culvert replacement or upgrade is required. If required, this work will be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping will only be used if flow conditions require it. Crossings will avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, will retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Construction activities will be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions will be applied to guide construction activity (CH2M & Fairhurst, 2018): • high intensity rainfall-rainfall during construction greater than 10 mm per hour • long duration rainfall-rainfall in the preceding 24 hours greater than 25 mm • 7-day cumulative rainfall (1)-preceding 7 days of rainfall greater than 50% of the monthly average

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
			• 7-day cumulative rainfall (2)-preceding 7 days of rainfall greater than 50 mm. Any water collecting within excavations will be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This will be undertaken at designated treatment locations within the Site and water from deep excavations will be tested to ensure appropriate quality prior to discharge; details will be provided in the CEMP. Vegetation cover will be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of biodegradable geotextile, will be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the ECoW.
Hydromorphology **Hydromorphology includes both 'hydrology' and 'geomorphology' and describes the physical characteristics and processes of a waterbody.** **Could the proposal lead to changes in:**			
• quality and dynamics of water flow	Yes	All construction works involving earthworks will generate loose sediment, which could	The proposed measures outlined above will be implemented to prevent any adverse effects on the hydromorphology of the waterbody.

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
• connection to groundwater bodies • river continuity or residence time for lakes • river/lake depth and width variation • structure and substrate of the river/lake bed • structure of the riparian zone/lake shore		potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity.	
Is the proposal in a HMWB?	No		

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Water quality **An activity can modify the flow of water, introduce artificial materials or remove sediment and/or vegetation. These can all affect the water quality – particularly physico-chemical aspects of water quality - such as levels of dissolved oxygen, nutrients and ammonia.** **Include water quality in the detailed assessment if the activity could affect:**			
• water clarity (turbidity or suspended particulate matter concentration) • temperature • oxygen levels • nutrients: total phosphorus concentration (Lakes); soluble reactive phosphorus concentration (Rivers). • salinity/conductivity • acidification status	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the water quality of the waterbody.

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Chemicals **A detailed assessment will also be required if the activity uses or releases chemicals, for example, through sediment disturbance or building works.** **This is necessary when either the:**			
• chemicals are on the Environmental Quality Standards Directive (EQSD) list (GOV UK, 2016) • or, if the activity releases chemicals on the EQSD list (GOV UK, 2025) and has a mixing zone, like a discharge pipeline or outfall, follow the Environment Agency's surface water pollution risk assessment guidance. This is part of the	N/A	The Proposed Development will not release any chemicals on the EQSD list.	

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Environmental Permitting Regulations guidance (NRW, 2025).			
Biology **Identify if the activity or project could impact on the abundance or composition of the following biological elements: benthic invertebrates, phytoplankton, macrophytes and phytobenthos or fish.** **Could the proposal lead to:**			
• changes to the composition and abundance of aquatic flora, and or; • changes to the composition and abundance of benthic invertebrate fauna?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the waterbody.

Waterbody name: Llyn Maen Bras Waterbody ID: N/A			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures included in the proposal**
Fish fauna: Could the proposal lead to:			
• changes to the composition, abundance and age structure of fish fauna, • an impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, vibration, chemical change or a change in habitat, depth or flow), • entrainment or impingement of fish, • refuge/predation areas?	Yes	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies. Installation of watercourse crossing structures could provide a barrier to fish migration.	The proposed measures outlined above will be implemented to prevent any adverse effects on the biology of the WFD waterbody.

Table 7.3.11 Scoping Table for Groundwater Bodies - Dee Silurian/Ordovician Groundwater Drinking Water Protected Area

Waterbody name: Dee Silurian/Ordovician groundwater drinking water protected area Waterbody ID: GB41102G200200			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures already included in the proposal**
Groundwater	Direct – risk of direct impact	Physical changes to the shallow subsurface as a result of excavation works have potential to interrupt shallow groundwater flow paths. This will include proposed cut-and-fill track sections, turbine foundations, hardstanding areas, substation, laydown area, construction compound and cable trenches. Physical changes to the deeper subsurface (>5 m below ground surface) have potential to interrupt deeper groundwater flow paths. This will include borrow pit excavations and some turbine foundation areas.	Groundwater monitoring boreholes will be established within the proposed borrow pit area and at each turbine foundation prior to any construction work beginning, to a depth at least 1 m below the deepest expected excavation. Groundwater level and quality monitoring will be undertaken to determine whether groundwater is present within the proposed borrow pit area and, if it is, at what level the seasonally highest groundwater table stands, and to obtain a baseline for natural changes to groundwater chemistry. Any groundwater within the borrow pit area or turbine foundations will be managed in line with best practice, with discharge via a settlement pond to allow any entrained sediment to be removed prior to discharge. Any required discharge licence will be obtained prior to excavation commencing. Excavation of cable trenches could lead to groundwater flow between catchments if the trenches act as preferential flow paths. This can be avoided by laying cables in disturbed ground adjacent to access tracks. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barrier will

Waterbody name: Dee Silurian/Ordovician groundwater drinking water protected area Waterbody ID: GB41102G200200			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures already included in the proposal**
			be placed for every 0.5 m change in elevation along the length of the trench to minimise in-trench groundwater flow.
Identify if the activity/project has the potential to impact on the quality or quantity of groundwater. **Hydrogeological regime: Could the proposal lead to:**			
• a significant change to groundwater flows, for example, below ground structures which restricts or alters baseflow to dependent surface water or wetlands	Yes	Physical changes to the shallow subsurface as a result of all excavation work have potential to interrupt shallow groundwater flow paths. This will include proposed cut-and-fill track sections, turbine foundations, hardstanding areas, substation, laydown area, construction compound and cable trenches. Physical changes to the deeper subsurface (>5 m below ground surface) have potential to	The proposed measures outlined above will be implemented to prevent any adverse effects on the WFD groundwaterbody. No groundwater-dependent terrestrial ecosystems have been identified within the Site.
• abstraction of groundwater in large volumes or near sensitive locations	No		

Waterbody name: Dee Silurian/Ordovician groundwater drinking water protected area Waterbody ID: GB41102G200200			
Elements	**Applicable**	**Potential Impact (include direct and indirect potential impacts)**	**Avoidance measures already included in the proposal**
• a significant change to groundwater chemistry due to inputs of pollutants to the ground over a large area	No	interrupt deeper groundwater flow paths. This will include borrow pit excavations and some turbine foundation areas.	
• potential impact on groundwater dependent terrestrial ecosystems e.g. wetlands	No		

Table 7.3.12 Summary of Scoping Assessment Decision for the Construction and Decommissioning phases

Waterbody name & ID	WFD elements	Scoped in/ out	Justification for decision
Afon Meloch GB111067051960	Hydromorphology	In	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity. Additionally, sediment deposition may adversely impact downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk.
	Water quality	In	
	Biology	In	
Afon Mynach GB111067051990	Hydromorphology	In	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity. Additionally, sediment deposition may adversely impact downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk.
	Water quality	In	
	Biology	In	
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake	Hydromorphology	In	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing
	Water quality	In	

Waterbody name & ID	WFD elements	Scoped in/ out	Justification for decision
SAC/Afon Dyfrdwy SSSI	Biology	In	aggradation, channel widening and reduced flow capacity. Additionally, sediment deposition may adversely impact downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk.
Llyn Maen Bras	Hydromorphology	In	All construction works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could lead to sedimentation which can potentially have an adverse effect on the hydromorphology by increasing aggradation, channel widening and reduced flow capacity. Additionally, sediment deposition may adversely impact downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk.
	Water quality	In	
	Biology	In	
Dee Silurian/Ordovician Groundwater Drinking Water Protected Area GB41102G200200	Quality of groundwater	Out	Physical changes to the shallow subsurface as a result of all excavation work have potential to interrupt shallow groundwater flow paths. This will include proposed cut-and-fill track sections, turbine foundations, hardstanding areas, substation, laydown area, construction compound and cable trenches. Physical changes to the deeper subsurface (>5 m below ground surface) have potential to interrupt deeper groundwater flow paths. This will include borrow pit excavations and some turbine foundation areas.
	Quantity of groundwater	In	

Table 7.3.13 Summary of Scoping Assessment Decision for the Operational Phase

Waterbody name & ID	WFD elements	Scoped in/ out	Justification for decision
Afon Meloch GB111067051960	Hydromorphology	In	The main operational phase work will involve maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure. This could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
	Water quality	In	
	Biology	In	
Afon Mynach GB111067051990	Hydromorphology	In	The main operational phase work will involve maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure. This could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
	Water quality	In	
	Biology	In	
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI	Hydromorphology	In	The main operational phase work will involve maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure. This could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
	Water quality	In	
	Biology	In	
Llyn Maen Bras	Hydromorphology	In	The main operational phase work will involve maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure. This could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
	Water quality	In	
	Biology	In	
Dee Silurian/Ordovician Groundwater Drinking Water Protected Area GB41102G200200	Quality of groundwater	Out	No excavation work and no changes to the proposed infrastructure are anticipated during the operational phase of works.
	Quantity of groundwater	Out	

3 DETAILED ASSESSMENT

3.1.1 An assessment of the impact of the Proposed Development on WFD elements during the construction and operational phases of the Proposed Development is provided in **Table 7.3.14**.

Table 7.3.14 Summary Table of Potential Impacts on WFD Elements During Construction and Operation

Waterbody name & ID	WFD element/s scoped in	Construction, operational or decommissioning phase	Description of impacts; include a list of all evidence documents to inform the detailed assessment
Afon Meloch GB111067051960	Hydromorphology, water quality and biology	Construction, operational, decommissioning	All construction and decommissioning works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk. The operational phase work such as maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
Afon Mynach GB111067051990	Hydromorphology, water quality and biology	Construction, operational, decommissioning	All construction and decommissioning works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk.

Waterbody name & ID	WFD element/s scoped in	Construction, operational or decommissioning phase	Description of impacts; include a list of all evidence documents to inform the detailed assessment
			The operational phase work such as maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI	Hydromorphology, water quality and biology	Construction, operational, decommissioning	All construction and decommissioning works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk. The operational phase work such as maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure could generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff.
Llyn Maen Bras	Hydromorphology, water quality and biology	Construction, operational, decommissioning	All construction and decommissioning works involving earthworks will generate loose sediment, which could potentially gain access to surface watercourses and waterbodies through entrainment in surface runoff. This could potentially have an adverse effect on the downstream watercourses through damage to fish spawning habitat and changes to dissolved oxygen and nutrient levels in watercourses and waterbodies, as well as potentially increasing downstream flood risk. The operational phase work such as maintenance and repair of tracks, hardstanding areas and all operational phase drainage infrastructure could generate loose sediment, which could potentially gain access to

Waterbody name & ID	WFD element/s scoped in	Construction, operational or decommissioning phase	Description of impacts; include a list of all evidence documents to inform the detailed assessment
			surface watercourses and waterbodies through entrainment in surface runoff.
Dee Silurian/Ordovician Groundwater Drinking Water Protected Area GB41102G200200	Quantity of groundwater	Construction, decommissioning	Physical changes to the shallow subsurface as a result of all excavation work have potential to interrupt shallow groundwater flow paths. This will include construction and decommissioning of proposed cut-and-fill track sections, turbine foundations, hardstanding areas, substation, laydown area, construction compound and cable trenches. Physical changes to the deeper subsurface (>5 m below ground surface) have potential to interrupt deeper groundwater flow paths. This will include borrow pit excavations and some turbine foundation areas.

3.2 Mitigating for Potential Impacts

3.2.1 Mitigation measures which could remove the risk of deterioration or preventing the waterbodies achieving their objectives during the construction and decommissioning phases are provided in **Table 7.3.15** and mitigation measures for the operational phase are provided in **Table 7.3.16.**

Table 7.3.15 Mitigation Measures During Construction and Decommissioning Phases

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or preventing the achievement of waterbody objectives.
Afon Meloch (GB111067051960) Afon Mynach (GB111067051990) Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI Llyn Maen Bras	Surface water from the areas surrounding the turbine bases, all hardstanding areas and the borrow pit will be prevented from entering the working areas by appropriate use of peripheral bunding and cut-off drains. These will help to divert clean water around and away from working areas. Earth bunds will be covered with a geotextile to prevent mobilisation of sediment from the bund. Bunds planned to be in place for more than 3 months will be seeded to provide stability and erosion protection. During works requiring excavation or stripping of ground, silt fencing or appropriate alternative sediment control protection measures will be installed on the downslope side of the working area to prevent inadvertent discharge of silty water into watercourses. Pre-construction installation of long-term drainage will provide an additional level of sediment control. All engineering work within 50 m of watercourses, including track construction and installation of watercourse crossings, will have appropriate sediment control measures established prior to	The management and control measures, including emergency response procedures, will be set out in the CEMP, to be secured by planning condition. An outline CEMP is included in **ES Volume III, Appendix 2.1: Outline CEMP**. This will be a live document and will be updated as required throughout construction.	All necessary permissions relating to construction works, plus accompanying Pollution Prevention Plans, will be obtained by the Principal Contractor and agreed with NRW, Conwy and Gwynedd Councils prior to any construction work beginning on the Site.	Implementing the measures recommended will remove the risk of deterioration and/or will remove the risk of preventing achievement of waterbody objectives.

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or preventing the achievement of waterbody objectives.
	groundworks. Vegetation will be retained along watercourse banks to act as additional protection. Minor in-stream works may be required for some watercourse crossings or drainage areas, particularly if culvert replacement or upgrade is required. If required, this work will be undertaken using a temporary dam to control flow while crossing structures are installed. Over-pumping will only be used if flow conditions require it. Crossings will avoid creating impediments for fish migration such as steps in levels at the downstream end and, where possible, will retain the natural channel bed. For areas of larger excavation, such as turbine bases, crane pads and borrow pit, temporary water control measures may be used. These are anticipated to include use of temporary settlement ponds or proprietary treatment systems such as Siltbusters, as appropriate. Construction activities will be restricted during periods of wet weather, particularly for any works occurring within 20 m of a watercourse, to minimise mobilisation of sediment in heavy rainfall. The following 'stop' conditions will be applied to guide construction activity (CH2M & Fairhurst, 2018):			

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or preventing the achievement of waterbody objectives.
	• high intensity rainfall-rainfall during construction greater than 10 mm per hour • long duration rainfall-rainfall in the preceding 24 hours greater than 25 mm • 7-day cumulative rainfall (1)-preceding 7 days of rainfall greater than 50% of the monthly average • 7-day cumulative rainfall (2)-preceding 7 days of rainfall greater than 50 mm. Any water collecting within excavations will be pumped out prior to further work in the excavation. This water is likely to require treatment to remove suspended solids prior to discharge to ground. This will be undertaken at designated treatment locations within the Site and water from deep excavations will be tested to ensure appropriate quality prior to discharge; details will be provided in the CEMP. Vegetation cover will be re-established as quickly as possible on track, verges, screening bunds and cut slopes by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including			

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or preventing the achievement of waterbody objectives.
	hydroseeding and/or use of biodegradable geotextile, will be considered, if necessary, in specific areas and areas of particular sensitivity as identified on Site by the ECoW. Wastewater from welfare facilities will be held in a suitably sized containment tank and will be removed from site by tanker for treatment and disposal at a licensed facility.			
Dee Silurian/Ordovician Groundwater Drinking Water Protected Area GB41102G200200	Groundwater monitoring boreholes will be established within the proposed borrow pit area and at each turbine foundation prior to any construction work beginning, to a depth at least 1 m below the deepest expected excavation. Groundwater level and quality monitoring will be undertaken to determine whether groundwater is present within the proposed borrow pit area and, if it is, at what level the seasonally highest groundwater table stands, and to obtain a baseline for natural changes to groundwater chemistry. Any groundwater within the borrow pit area or turbine foundations will be managed in line with best practice, with discharge via a settlement pond to allow any entrained sediment to be removed prior to discharge. Any	The management and control measures, including emergency response procedures, will be set out in the CEMP, to be secured by planning condition. An outline CEMP is included in **Appendix 2.1**. This will be a live document and will be updated as	All necessary permissions relating to construction works, plus accompanying Pollution Prevention Plans will be obtained by the Principal Contractor and agreed with NRW, Conwy and Gwynedd Councils prior to any construction	Implementing the measures recommended will remove the risk of deterioration and/or will remove the risk of preventing achievement of waterbody objectives.

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or preventing the achievement of waterbody objectives.
	required discharge licence will be obtained prior to excavation commencing. Excavation of cable trenches could lead to groundwater flow between catchments if the trenches act as preferential flow paths. This can be avoided by laying cables in disturbed ground adjacent to access tracks. In areas where cable routes cross up or down notable slopes, clay bunds or alternative impermeable barrier will be placed for every 0.5 m change in elevation along the length of the trench to minimise in-trench groundwater flow.	required throughout construction.	work beginning on the Site.	

Table 7.3.16 Mitigation Measures During Operational Phase

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or prevent the achievement of waterbody objectives.
Afon Meloch GB111067051960	Any sections of track or hardstanding showing signs of excessive wear will be repaired as necessary	Where appropriate, measures from the	These mitigation measures will	Implementing the measures

Waterbody name & ID	List avoidance measures	How will the measure be applied	Who will be responsible for applying them?	Will this remove the risk of deterioration or prevent the achievement of waterbody objectives.
Afon Mynach (GB111067051990)	with suitable rock from external sources. Any sections of drainage infrastructure showing build-up of sediment or any signs of damage will be cleaned and repaired as necessary. Any watercourse crossing structures showing signs of blockage or debris build-up will be cleared and checked for damage. Where possible, maintenance work will be undertaken during periods of dry weather. If emergency repairs are required, additional sediment protection measures will be installed, such as use of temporary dams and silt fencing, to control suspended sediment.	Surface Water Management Plan (SWMP) approved prior to the construction phase will remain in place throughout the operational phase.	be secured via the agreed SWMP and implemented by the operator.	recommended will remove the risk of deterioration.
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI				
Llyn Maen Bras				

3.2.2 Following the detailed assessment of WFD waterbodies, protected areas and other waterbodies potentially at risk of deterioration from the Proposed Development were scoped in for further assessment at the scoping stage. A summary of the detailed assessment decision is provided in

3.2.3

3.2.4

3.2.5 Table 7.3.17.

Table 7.3.17 Detailed Assessment Decision Summary Table

Waterbody name & ID	WFD element/s scoped in	Construction, operational or decommissioning phase	Is there a risk the proposal may cause deterioration?* 'YES' or 'NO'	Is there risk of the activity preventing the waterbody/PA from meeting its objectives?* 'YES' or 'NO'
Afon Mynach	Hydromorphology Water quality Biology	Construction, operational, decommissioning	No	No
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/ Afon Dyfrdwy SSSI	Hydromorphology Water quality Biology	Construction, operational, decommissioning	No	No
Llyn Maen Bras	Hydromorphology Water quality Biology	Construction, operational, decommissioning	No	No
Dee Silurian/Ordovician Groundwater Drinking Water Protected Area GB41102G200200	Hydromorphology Water quality Biology	Construction, decommissioning	No	No
Afon Dyfrdwy a Llyn Tegid/River Dee and Bala	Hydromorphology Water quality	Construction, operational, decommissioning	No	No

Lake SAC/ Afon Dyfrdwy SSSI	Biology			

4 CONCLUSION

4.1.1 This WFD assessment evaluated the potential impact of the Proposed Development on the following WFD waterbodies and other waterbodies:

- Afon Meloch (GB111067051960)
- Afon Mynach (GB111067051990)
- Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC/Afon Dyfrdwy SSSI
- Llyn Maen Bras
- Dee Silurian/Ordovician Groundwater Drinking Water Protected Area (GB41102G200200)

4.1.2 None of the waterbodies assessed are heavily modified waterbodies.

4.1.3 The Proposed Development will not cause deterioration or prevent the waterbodies and protected areas from meeting their objectives. This is because the Proposed Development has been designed primarily to avoid adverse impacts and, where these are unavoidable, comprehensive mitigation and monitoring measures have been proposed in the CEMP to prevent adverse impacts. The measures proposed during the construction phase will be similar during the decommissioning phase. Where necessary, mitigation measures secured during the construction phase will be maintained during the operational phase.

4.1.4 Therefore, it is concluded that with the implementation of the best practice construction and mitigation measures proposed, the Proposed Development is compliant with the WFD regulations (UK Government, 2017).

Detailed Assessment Completed by	Etisang Abraham (Environmental Consultant)	Date 15/07/2025
Detailed Assessment Reviewed by	Catherine Isherwood (Technical Director)	Date 22/07/2025

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