

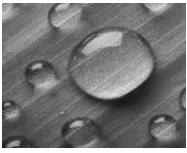
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Cilybebyll Hydro Scheme

WFD Compliance Assessment

January 2026

**Hydropower Consultancy &
Development**



Document Control

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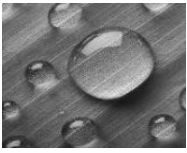
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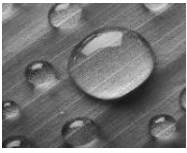
1.1 Overview:

The WFD is a piece of EU legislation that was created with the aim of improving the ecological and chemical status of all types of water bodies in Europe. This directive was transposed into UK law so, despite leaving the EU, we still adhere to this legislation. Ireland has its own set of laws implementing the framework guidelines. The water bodies covered by the WFD are:

- Surface water bodies (streams, rivers, lakes)
- Groundwater
- Transitional water bodies (estuaries)
- Coastal waters

The framework for delivering the WFD is through River Basin Management Planning, which requires surface waterbodies to achieve both Good Chemical Status (GCS) and Good Ecological Status (GES), and for groundwater bodies to achieve both Good Chemical Status (GCS) and Good Quantitative Status (GQS). The River Basin Management Plans (RBMPs) outline the actions required to enable natural waterbodies to achieve this. Artificial and Heavily Modified Water Bodies (AHMWB) are surface waterbodies that may be prevented from reaching GES due to the modifications necessary to maintain their function for essential human uses, such as flood defence, navigation or drinking water supply. They are, however, required to achieve Good Ecological Potential (GEP), through the implementation of a series of mitigation measures outlined in the RBMP. The background to the WFD and required assessments is set out in Figure 2-1. Although the UK is no longer part of the EU, the aims and requirements of the WFD are part of UK legislation and a WFD assessment is a requirement for this Scheme. New activities and Schemes that affect the water environment may adversely impact biological, hydromorphological, physicochemical and/or chemical quality elements (WFD quality elements), leading to a deterioration in waterbody status. They may also render proposed improvement measures ineffective, leading to the waterbody failing to meet its WFD objectives for GES/GEP. Under the WFD, activities and Schemes must not cause deterioration in waterbody status or prevent a waterbody from meeting GES/GEP by invalidating improvement measures. In addition to protecting and improving waterbodies, the WFD also requires that a register of 'Protected Areas' is developed, which are "all areas lying within each river basin district which have been designated as requiring special protection under specific Community legislation for the protection of their surface water and groundwater or for the conservation of habitats and species directly depending on water". In the UK, these Protected Areas are:

- Areas with water-dependent habitats that are protected under the Conservation of Habitats and Species Regulations 2017, and (by Government policy) under the Ramsar Convention;



- Drinking Water Protected Areas;
- Shellfish Waters;
- Bathing Waters;
- Nutrient Sensitive Areas.

The potential impacts of new activities and Schemes on these WFD Protected Areas must also be considered in order to ensure compliance with the overall requirements of the WFD.

A WFD compliance assessment evaluates the baseline hydromorphology, biological and chemical status of a water body and assesses the potential effects of a proposed development to ensure no deterioration and the achievement of future water body targets, forming part of planning and statutory consent processes.

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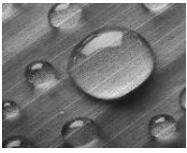
Overview of Development

This project is a proposed 26 kW micro hydro scheme for the generation of electricity from a renewable source, water. This is in addition to the 11kW hydro station already present on another watercourse at the site. This proposal shares a powerhouse with the existing scheme and the first 438m of the full 900m pipeline has already been installed as part of the first hydro project making use of the same trench but it is separate pipeline to the other hydro scheme (and a separate turbine, just the outfall is shared).

The applicant is the landowner of the project. The applicant owns the farm and holiday cottages beside the powerhouse location and the electricity will be connected to the farm demand as well as the National Grid network. The applicant supports efforts to address and seek solutions to climate change and is therefore making an effort to contribute towards National and regional requirements for clean energy. The applicant is also committed to environmental protection and is committed to minimising the impact of the project on the local ecology.

The works will include:

- A small intake structure across the watercourse on the face of a small waterfall/cascade, incorporating a Coanda screen with 1.3mm apertures and stilling chamber.
- A pipeline of HDPE plastic pipe (315mm outside dia.) running from the intake down to the turbine house on the West side of the watercourse. (Burial depth generally 400mm to crown) The pipeline is 900m long in total but 462m is already installed as part of the previous project. The pipeline is mainly buried with the one



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section overground up at the top near the intake where trees are present as detailed in the General Layout.

- The turbine house building is already built as Plas Farm Hydro shares the building, the works will be to install a second hydroelectric turbine, generator, and control panel within this building.
- A buried electrical cable from the turbine house to the Plas Farmhouse connection point. (Buriel Depth 600mm)

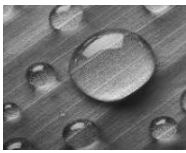


Plas Farm powerhouse is also Cilybebyll Powerhouse (shared) building already built as per Plas Farm Hydro planning permission (P2024/0496)

1.3 Clydach – headwater to confluence with river Neath ID: GB110058026390

Summary of WFD Classification for Screened Surface Water Bodies (Natural Resources Wales, 2021)

Type	Hydromorphological designation	Waterbody ID	Length (km)	Protected Area Designation	Overall Status Cycle 1	Overall Status Cycle 2	Overall Status Cycle 3	Overall Status Objective
River	Natural	GB110058026390	Unknown	None	Moderate	Moderate	Moderate	Good by 2027



WBID	WB name	WB type	NRW Area	EA Area	RBD Desc	HMWB	OverallWaterBody	Eco	Chem	Driving_Element
GB110058026390	Clydach - headwaters to conf with River Neath	River	South West Wales	WA South West	Western Wales	Natural	Poor	Poor	High	Fish
Mit_Assmnt	Expert	Eco_Bio	AWIC	AWIC_Roll	Fish	Fish_Conf	Fish_Roll	FishSpFal	Inverts	Inverts_Conf
		Poor			Poor	Uncertain		Salmon	High	Quite Certain
Inverts_Roll	Mac_Phyto	Mac_Phyto_Conf	Macro_Sub	Macro_Sub_Conf	Macro_Sub_Roll	Diatom_S	Diatom_Sub_Conf	Diatom_S	Eco_Gen	ANC
	2021								Good	
ANC_Conf	ANC_Roll	Ammonia	Ammonia_Conf	Ammonia_Roll	BOD	BOD_Conf	BOD_Roll	DO	DO_Conf	DO_Roll
		Good	Uncertain		2021			High	Very Certa	2021
pH	pH_Conf	pH_Roll	P	P_Conf	P_Roll	Temp	Temp_Conf	Temp_Roll	Eco_HM	Hydro
High	Very Certain		2021	Good	Uncertain	2021	High	Uncertain	2021	Not High
Hydro_Conf	Hydro_Roll	Morph	Morph_Conf	Morph_Roll	Spec_Poll	Acid_2_4	Acid_2_4_Conf	Acid_2_4	Arsenic	Arsenic_Conf
No Information		2015	Not High	No Information	2013	High				
Arsenic_Roll	Carbendaz	Carbendaz_Conf	Carbendaz_Roll	ChloroThat	ChloroThat_Conf	ChloroTha	Chrom VI	Chrom VI	Chrom VI	Copper
										High
Copper_Conf	Copper_Roll	Diazinon	Diazinon_Conf	Diazinon_Roll	Dimethoate	Dimethoa	Dimethoate_Roll	Glyphosat	Glyphosat	Glyphosate_Roll
No Information		2018								

The Cilybebyll Hydro site is up at the head waters of the River Clydach a waterbody with an objective of being 'Good' by 2027. Fish have been determined as the element driving the ecological status.

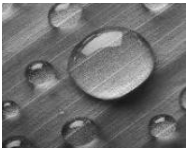
Clydach – headwaters to conf with River and Neath Estuary are not designated as a WFD protected area and no other WFD protected areas, which includes SACs, SPAs, Shellfish Waters, Bathing Waters and Coastal Sensitive Areas, are located within 2 km of the Scheme. No Sites of Special Scientific Interest (SSSIs) are located within 2 km of the Scheme.

2 Scoping of Scheme Activities

A Scoping exercise has been undertaken to identify the potential risks of the project that has been screened in for further assessment to relevant WFD receptors. The Scoping process has followed the Clearing the Waters for All guidance, and has considered the risks of the Scheme activities during the construction stages.

- Hydromorphology;
- Biology – habitats;
- Biology – fish;
- Water quality;
- Protected Areas; and
- Invasive non-native species (INNS).

Receptor	Potential risk to receptor?	Note the risk/issue for impact assessment
Hydromorphology	Yes	Derogated reach and 10m long reach experiencing higher flows form outfall to confluence
Biology:Habitats	No	No sensitive habitats or habitats of



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		importance are located near the works.
Biology:Fish	Yes	Derogated reach
Water quality	No	All potential impacts to water quality will be reduced or mitigated through the use of good working methods and mitigation measures during construction
Protected areas	No	No WFD protected areas are located within 2km of the site
Invasive non-native species (INNS)	No	All impacts associated with INNS will be mitigated through the use of good working methods and construction practices

3 WFD Assessment

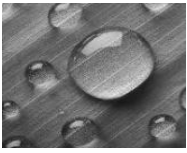
6.1. Hydromorphology

Adherence to the abstraction details decided by NRW as part of the abstraction licence will ensure that the watercourse is protected from the abstraction, with a hands of flow and a flow split appropriate for the watercourse to ensure a range of flows are present within the derogated reach and no abstraction at all during low flows (due to the hands off flow). This is physically guaranteed by the hands off flow notch in the weir sized as per the licence conditions. The max abstraction is limited to Qmean flow (59lps) and this ensures that the high flow conditions where sediment transport occurs are still abundant through the derogated reach. This intake crest level is at the top of an existing small waterfall and ensures that there is not potential sediment trap upstream of the intake weir.

The proposed Scheme will not result in any deterioration to hydromorphological supporting elements. The proposal is deemed to be compliant with this WFD quality element.

6.2. Biology: Fish

The installation of the intake screen with a new weir on the existing waterfall will allow fish to move safely downstream via the overflow nature of the screen itself (Coanda screen) and the hands of flow V notch. Upstream movement will be impeded to an extent matching the existing waterfall, with the V notch in fact a little lower and more concentrated as far as a path for upstream migration.



The outfall is screened with a 25mm vertical square bar screen which is safe for fish and the velocities present with both schemes discharging are sufficiently low for not risk to fish to be present at the outfall. The outfall is already installed as part of the Plas Farm existing hydro and thus there are not work on the river bank in this location, only the intake works for this project are in the watercourse. At the intake the river banks will be kept in their present good condition and any disturbance around the intake footprint will be reinstated with the natural rock forms before the water diversion (piped) is reinstated.

Any impacts will not be significant and will not affect fish populations of the waterbody. The proposed Scheme will not result in any deterioration to biological supporting elements. The proposal is deemed to be compliant with this WFD quality element.

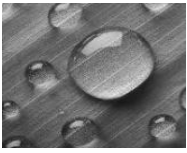
4 Good Working Practices

Works will be carried out during daylight hours (it is anticipated that all construction activities will be limited to daytime hours (for example in Summer, 7:30am to 6:00pm from Monday to Friday, and from 8:00am to 1:00pm on Saturdays). This will avoid the need for artificial lighting that could disturb fish; In winter works will finish by 4pm.

- Site compounds, materials and equipment will be appropriately secured and fenced off, away from surface waterbodies. The site compound is expected to be some distance from the construction area. An existing compound area exists on site at Plas Farm and will be used for all compound purposes.
- The Scheme will make use of well-maintained equipment and plant to minimise potential for fuel/oil and chemical leaks. Plant and machinery will be switched off when not in use;
- All equipment and materials used will following the 'Check, Clean, Dry' guidance prior to their arrival on Site, and on removal from Site to prevent the spread of INNS; and
- The proposed works will strictly follow the Pollution Prevention Guidelines (PPGs)/ Guidance on Pollution Prevention (GPPs) and the Construction Industry Research and Information Association (CIRIA) guidance on the control of water pollution from construction sites.

5 Conclusion

This document presents a WFD assessment of the proposed works for Cilybebyll Hydro in respect to the biological, physiochemical and hydromorphological quality elements of the Clydach – headwaters to confluence with River Neath. The main considerations for this waterbody were the potential hydromorphological and disturbance impacts to fish from the installation of the intake weir structure and impacts of the project abstraction regime



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along with the nearby Plas Farm Hydro project on a joining tributary of the Clydach. The projects having a shared outfall and therefore a CCWT being present on the 10m of watercourse between the outfall and the confluence of the Plas Farm Hydro unnamed tributary and the Clydach watercourse.

However, these impacts were determined to be insignificant at a waterbody scale. Therefore, this assessment has determined that any changes to water quality elements would not be significant from baseline conditions. All of the works for the Proposed Scheme will be undertaken during daytime hours, avoiding the requirement for artificial lighting which may disturb migratory fish species. The risk of pollution events and spillages from imported material and plant machinery, as well as suitable access and egress routes will be mitigated through contracting licensed suppliers, good planning, best practice working measures, including the Pollution Prevention Guidelines (PPG)/ Guidance for Pollution Prevention (GPPs) and management through the Construction Environmental Management Plan (CEMP). Liaison with NRW will continue throughout the application process to ensure that all practicable mitigation measures are implemented during the works. Based on the information available and considering the control measures which will be employed throughout the works, the Scheme will not result in any deterioration to the supporting elements of any of the water bodies. Therefore, the Scheme will not result in deterioration to any WFD quality elements of the Clydach – headwaters to conf with River Neath and is deemed to be compliant.