Form WRD: Application for a new abstraction licence or a technical variation to an abstraction licence

Application type

Reference number (The number you generated in form WRA). Example: WRNATURALRESOURCESWALES1101
WRSTANTECCLYDACH01

For hydropower abstractions, specify the capacity (in kilowatts) of your scheme.
>100kW

Are there any applications currently being assessed by us that are linked to this application?
No

Is the proposed abstraction going to be aggregated with another existing abstraction?
No

Are any applications, at the same site; being assessed by the Environment Agency?
No

Tell us when you want your abstraction licence to end: [DD/MM/YY]
30/11/2044

If you require a shorter or longer duration licence, please provide details and your justification
Anticipated abstraction start date 30/11/2026. 18-year license from this date.

Abstraction details

Abstraction location name/reference
Clydach Vale Country Park

Abstraction point type
Single point

National Grid Reference
SS 98321 92805

Downstream National Grid Reference (If abstracting from a reach), or corners of the area.
SS 99180 92688 - - -

Do you have any further points of abstraction?
No

Means of abstraction

Provide full details of the equipment you propose to use to abstract water, such as maximum pump capacity and any relevant dimensions, e.g. pipe diameter. For groundwater abstractions, include details about the borehole (depth and diameter) and details of screening and lining.
Abstraction will take place via the installation of a new weir. The depth of the abstraction notch is dictated by the design flow limits (up to 5% percentile flow). Beyond the design flow limits, the flow will behave the same as before.

Please upload your drawings and calculations here. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)
• File: 37199-HYD-XX-XX-C-1010 Weir General Arrangement Plan.pdf - Download

Abstraction quantities

Abstraction location name/reference
Clydach Vale Country Park

What purpose will the water be used for?
Hydroelectric generation

Period of abstraction Will it be all year?
Yes

Maximum quantities (cubic metres)	
Annual	5,580,295
Daily	15,288 (average)
Hourly	637 (average)

Peak abstraction rate (in litres per second)
390

Number of hours of abstraction per day
24

Add quantities for another location?
No

Calculations and supporting information

Use this section to show us how you have calculated the amount of water you require. This should include details of your operational regime (for example, number of hours and days you intend to abstract, number of units produced or area to be irrigated). We use this information to determine if the volumes you propose to abstract are appropriate for the purpose. Depending which industry you are in, you may need to provide additional information below.

If your proposal involves the provision of a residual flow via a notch or orifice, provide information on how this is being calculated. This should include details of the equation being used.

The m3 per annum was calculated using the attached exceedance curve data. A design flow limit of 390 l/s has been set. The provision of a hands-off flow is set at 36l/s.

Additional document. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)

- File: hydrology_exceedance_report.pdf - Download
- File: Clydach SData(V1) (002).xlsx - Download

Industry-specific requirements

	% abstraction and zone applied for	Average gradient of depleted reach (%)	Catchment size above abstraction point (kilometres squared)	Net head between abstraction and discharge points (metres)
	100	4.9	-	46.9

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	87.7	67	158.6	634,000

State the length of depleted reach (in metres)

960

Provide the flow data (in cubic metres per second) & ratios specified below:

Q95	0.036
Q10	0.708
Qmean	0.30
What is the ratio of Q95:Qmean?	0.12
What is the ratio of Q10:Qmean?	2.36

What low flow protection (Low flow protection is the flow rate above which abstraction can begin and is separate to the abstraction % take) do you propose to maintain in the depleted reach when the hydropower scheme is operating (in m3/s)?

0.036

Means of measurement

State how you intend to measure the quantity of water you abstract. You do not need to do this for a temporary or transfer licence.

Power Generated

Water efficiency

Provide details of what measures you provide or intend to implement, to ensure efficient use of water. This could include water storage, re-use or recirculation, monitoring and checking for leaks, undertaking water audits or other industry specific good practice.

Ensure ongoing monitoring of the pipework to detect any leakage as soon as it may arise. Controlled monitoring of the intake chamber level, flow over the weir, and power output of the scheme will detect any abnormalities remotely as soon as they may occur.

Fish and eel considerations (surface water abstractions only)

Does your proposal include measures to safeguard fish and eels? Only provide details of outfall screening if abstracted water is to be discharged back into a watercourse. For further guidance on appropriate screening Intake screening for fish

	Intake	Outfall
Type of fish screen	TBD	TBD
Screen aperture size (mm)	TBD	TBD

Confirm the fish species present at your site. If you're not proposing any measures to protect fish and eels, you must justify this. For example, we may have confirmed in our pre-application response that the intake is inaccessible to fish or you undertook a fish survey to confirm.

Survey to be completed

Discharge details

If you intend to return any of the abstracted water to the environment, provide details below. Details of discharge location(s) should correspond with any maps submitted. Do not include discharges to a public sewage system.

	Discharge location name / reference	National Grid Reference of discharge point (12 digit)	Total volume to be discharged (cubic metres)	Environmental Permit for Water Discharge Activity number (if applicable)
	De Winton Street Car Park	SS 99180 92688	5,580,295	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Provide a description of the structure and equipment involved in discharge.

A standard reinforced concrete weir structure, with coanda screen designed for proportional abstraction in accordance with the abstraction profile submitted, captures water which moves under gravity through a chamber and via a gate valve into an HDPE penstock. The penstock of 630mm diameter and approximately 960m length channels the water to the powerhouse. The powerhouse inlet has a gate valve isolation before passing through a Crossflow turbine, dropping into a tail race outlet which feeds water into the watercourse via a screen.

Other abstractors / water users

Provide details of nearby abstractors or users of water who could be affected by your proposal. This should include deregulated users (exempt activities or abstractions < 20 cubic metres per day), anglers and canoeists.
Your local authority's environmental health will hold details of exempt domestic abstractors.

N/A

Planning application

Have you sought advice on your planning application?

No

Declaration

By signing below, you are declaring that, to the best of your knowledge; the information given in this form, on any map and in any supporting or additional information; is true.

Signed Susan 'T Hart

Print name Susan 'T Hart

position Renewable Energy Consultant

If an agent is to sign on behalf of the Licence Holder, a letter of authorisation from the Licence Holder is required.

- File: Stantec - LoA Clydach Abstraction License Authorisation.pdf - Download

Date

* 15/07/2025

Would you like a copy of your submission?

Yes

Your email address
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