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
WRWMJONES&CO2110

For hydropower abstractions, specify the capacity (in kilowatts) of your scheme.
>50 to 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

Abstraction details

Abstraction location name/reference
Intake

Abstraction point type
Single point

National Grid Reference
SH 62109 56648

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.

As existing. No changes proposed. It is a concrete intake weir the full width of the watercourse with a 2mm aperture coanda screen. The penstock (pipe), from this weir to the turbine, is 355mm diameter and made from High Performance Polyethylene (HPPE). See the attached intake weir drawings.

Please upload your drawings and calculations here. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)

- File: 130817MP02-V3 Afon Gennog Weir Front Elevation and Levels.pdf - Download
- File: 130817MP03-V3 Afon Gennog Weir Positioning.pdf - Download
- File: 130817MP04-V3 Afon Gennog Weir Overall Dimensions.pdf - Download
- File: 130817MP05-V3 Afon Gennog Weir GA and Nomenclature.pdf - Download
- File: 130817MP06-V3 Afon Gennog Weir Side Elevation and Sections.pdf - Download
- File: 130817MP07-V3 Afon Gennog Weir Sections AA and BB.pdf - Download
- File: 130817MP08-V3 Afon Gennog Weir Section CC and Right Elevation.pdf - Download

Abstraction quantities

Abstraction location name/reference

Intake

What purpose will the water be used for?

Hydropower

Period of abstraction

Will it be all year?

Yes

Maximum quantities (cubic metres)

Annual 5991840

Daily 16416

Hourly 684

Peak abstraction rate (in litres per second)

190

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.

As existing. No changes proposed.

Design flow (peak abstraction) = 190l/s
Max hourly abstraction (Design flow x 3600 sec) = 684.0m3
Max daily abstraction (Max hourly abstract x 24h) = 16,416.0m3
Max Annual abstraction (Max Daily Abstraction x 365 days) = 5,991,840m3

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)
	As existing (50%, Zone 3)	26%	1.46	75.7m (turbine's net head at full power)

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	85%	77% (turbine & generator combined)	100	265000

State the length of depleted reach (in metres)
338

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

Q95	0.014
Q10	0.411
Qmean	0.174
What is the ratio of Q95:Qmean?	0.08
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)?

As existing, 0.014m3/s

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.

A high efficiency turgo turbine and induction generator are in use.

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 (opens in new tab)

	Intake	Outfall
Type of fish screen	Coanda	Vertical bar
Screen aperture size (mm)	As existing (2mm)	As existing (10mm)

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)
	Outfall	SH 62267 56921	All the abstracted water	N/A
	-	-	-	-
	-	-	-	-
	-	-	-	-

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

As existing. No changes proposed. Stilling well to dissipate the water's energy prior to discharge into the watercourse.

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?

Yes

Submit a copy of the Planning Authority’s response.

- File: Afon Gennog Planning Permission.pdf - Download

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 Sylvia Jones

Print name Sylvia Jones

position Partner

Date

* 22/10/2025

Submit your application

Enter your email address to get a copy of your application

syv0762@icloud.com