

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

WRNTyleGarw3006

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

>25 to 50kW

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

Tyle Garw Hydro Intake

Abstraction point type

Single point

National Grid Reference

SN 93360 20426

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.

Coanda Screen hydro intake , spacing is 1mm, water is directed down a 180mm PE pipeline

Abstraction quantities

Abstraction location name/reference

Tyle Garw Hydro Intake

What purpose will the water be used for?

Electricity Generation

Period of abstraction Will it be all year?

Yes

Maximum quantities (cubic metres)

Annual 1009152

Daily 2764.8

Hourly 115.2

Peak abstraction rate (in litres per second)

32

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.

HOF flow is Q95 3lps
Design Flow (max abstraction) is 32lps which is the mean flow
Flow Split is 70% as per intake drawing

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

- File: Low Flows Tyle Garw.docx - [Download](#)
- File: Tyle Garw V Notch Compensation Discharge.xls - [Download](#)
- File: TG-DWG-Intake-B-290623-DM.pdf - [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)
	70	0.20	0.558	130

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	0.8	0.7	35	116000

State the length of depleted reach (in metres)

750

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

Q95	0.003
Q10	0.076
Qmean	0.032
What is the ratio of Q95:Qmean?	0.093
What is the ratio of Q10:Qmean?	2.375

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)?

0.003

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.

Hydro has internet remote monitoring and pipeline will be regularly checked as part of monthly site checks any significant will quickly be noticed by the monitoring as it will effect the performance

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	coanda screen	Vertical Bar
Screen aperture size (mm)	1 mm	25mm

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.

Intake is inaccessible to fish due to large waterfalls, no eels present due to distance from the sea

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	SN 92889 20920	0.032	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

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

Buried 225mm pipe from turbine sump to watercourse bank, stone splay and galvanised steel 25mm vertical bar 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.

None, remote and tiny watercourse

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 Adam Cropper

Print name ADAM CROPPER

position Applicant

Date

* 30/06/2023

Would you like a copy of your submission?

Yes

Your email address

adam@ellergreen.com