

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

WRNBHYDRO09072026

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

25kW or less

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]

As far ahead as possible

Abstraction details

Abstraction location name/reference

Main Intake (Existing)

Abstraction point type

Single point

National Grid Reference

SH 71354 21792

Do you have any further points of abstraction?

Yes

Abstraction details - Further points

Abstraction location name/reference

Intake 2

Abstraction point type

Single point

National Grid Reference

SH 71241 21709

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.

This is an existing hydro scheme which features two intakes with buried pipelines linking them to a hydro turbine in the turbine house from which the water is discharged back into the Afon Wnin.

Each intake features:

An overshoot self cleaning coanda screen in the screen notch of the weir

A flow split notch set at the same level as the screen notch

A HOF (Hands Off Flow) notch set within the flow split notch

A bristle brush eel pass

A stepped pool fish pass

A gravity fed pipe to convey the water

Dimensions and levels of these items are included on the drawing for each intake

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

- File: 264_14 Afon Wnin Low Flows.pdf - [Download](#)
- File: Main intake drawing.pdf - [Download](#)
- File: Intake 2 drawing.pdf - [Download](#)
- File: Design statement for abstraction licence Afon Wnin.pdf - [Download](#)

Abstraction quantities

Abstraction location name/reference
Afon Wnin Hydro Main Intake

What purpose will the water be used for?
Hydropower

Period of abstraction
Will it be all year?
Yes

Maximum quantities (cubic metres)
Annual 914544
Daily 2505.6
Hourly 104.4

Peak abstraction rate (in litres per second)
29

Number of hours of abstraction per day
24

Add quantities for another location?
Yes

Abstraction quantities - Another location

Abstraction location name/reference
Afon Wnin Hydro Intake 2

What purpose will the water be used for?
Hydropower

Period of abstraction Will it be all year?

Yes

Maximum quantities (cubic metres)

Annual 315360

Daily 864

Hourly 36

Peak abstraction rate (in litres per second)

10

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 rated flow has been set at the mean flow for each intake
The hourly rate is that multiplied by 3600 seconds per hour
The daily rate is that multiplied by 24 hours per day
The annual rate is that multiplied by 365 days per year

HOF for each intake is set at Q95.

NRW deemed that the site was suitable for a Zone 3 abstraction rate during the pre-application process. Attached is NRW's preapp response from 2014 which gives details of abstraction rates, fisheries etc.

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

- File: NRW preapp response.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% and Zone 3	10	.86	35

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	0.86	77	11	40000

State the length of depleted reach (in metres)

360

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

Q95 .004

Q10 .091

Qmean .039

What is the ratio of Q95:Qmean? 0.103

What is the ratio of Q10:Qmean? 2.34

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)?

Q95 = .004 between the 2 intakes

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.

The system has been built to a high specification including high efficient turgo turbine and generator, and pipeline. Regular checks will be made to ensure that there are no leaks and that the system is operating as it should.

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	Mesh screen
Screen aperture size (mm)	3	50mm

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.

It is assumed brown trout and eels are present. The application includes all items as advised in the NRW pre application response including fish screens, eel passes and up/downstream fish easements. These measures are included in the intake drawings. An outfall screen of 50mm is included although it was not required in the pre-application response.

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	SH71294 21517	100% of abstraction	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

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

The turbine house is a steel frame building constructed adjacent to the river Wnin. Water passes through the turbine and then falls vertically downwards through a hole in the floor onto the river bank which is bedrock at this point. The water then flows down the rock back into the river. There is a 50mm mesh screen directly beneath the turbine through which the water must flow.

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

Planning application

Have you sought advice on your planning application?

Yes

Submit a copy of the Planning Authority's response.

- File: decision notice.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 Mrs Eirian Davenport

Print name Eirian Davenport

position Partner

Date

* 09/07/2026

Submit your application

Enter your email address to get a copy of your application

nick@nbhydro.co.uk