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
WRPenrhynEnergyLimited0409

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

Tell us when you want your abstraction licence to end: [DD/MM/YY]
31/03/2043

Abstraction details

Abstraction location name/reference
Point A

Abstraction point type
Single point

National Grid Reference
SH6012269963

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.

Existing intake channel adjacent to existing weir.

If necessary, continue on a separate sheet and upload below.

- File: COCHW_C120_R03 Intake Layout Plan.pdf - Download
- File: COCHW_C123_R01 Intake Elevations.pdf - Download
- File: COCHW_C140_R03 Turbine House Layout Plan.pdf - Download
- File: COCHW_NRW_01 Fish Pass General Arrangment.pdf - Download
- File: COCHW_NRW_03 Large Debris Screen Detail.pdf - Download
- File: 179-603revDFISHPASSGENERALARRANGEMENT.PDF - Download
- File: 179-601-602 FISH PASS PROPOSAL.PDF - Download
- File: COCHW_C144_R01 Outfall Channel Detail.pdf - Download

Abstraction quantities

Abstraction location name/reference

Point A

What purpose will the water be used for?

Hydro power generation

Period of abstraction

Will it be all year?

Yes

Maximum quantities (cubic metres)

Annual 47520000

Daily 216000

Hourly 7920

Peak abstraction rate (in litres per second)
2500

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.

Flow rates to be the same as the previous licence:
216,000 cubic metres per day.
47,520,000 cubic metres per year.
At an instantaneous rate not exceeding 2,500 litres per second.
HoF 533 l/s.
From 1 January to 31 March each year, the quantity of water abstracted shall not exceed 60% of the available flow in the Afon Ogwen in excess of 533 litres per second.
From 1 April to 31 December each year, the quantity of water abstracted shall not exceed 40% of the available flow in the Afon Ogwen in excess of 533 litres per second.

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)
	60% Zone 2	7%	76	7.9

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	82	91	90	507,000

State the length of depleted reach (in metres)

250

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

Q95	0.533
Q10	12.7
Qmean	5.423
What is the ratio of Q95:Qmean?	0.10
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)?

0.533

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.

All water is returned to the river.

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	Self cleaning sloped travelling screen	Vertical bar screen
Screen aperture size (mm)	3	30

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.

Salmonids and eels.

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)
	Point Q	SH 60115 70235	2.5	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

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

Turbine outfall culvert incorporating 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.

Anglers

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	A R Ezard
Print name	Adrian Ezard
position	Hydro Engineer

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

- File: Carter Jonas LOA - NRW.pdf - Download

Date

* 16/09/2025

Submit your application

Enter your email address to get a copy of your application

adrian@renewablesfirst.co.uk