Form WRE: Application for a new impoundment licence, technical variation to an impoundment licence or the removal of an existing impoundment

Water Resources Act 1991, Environment Act 1995, The Water Resources (Abstraction and Impoundment) Regulations 2006, The Natural Resources Body for Wales (Functions) Order 2012

1. Application type

New impoundment licence	☒	
Removal of an existing impoundment	☐	Complete sections 2 and 4
To licence an existing impoundment	☐	
Technical variation to an impoundment licence	☐	

Give existing licence or pre- application reference number(s): PPN-00152

2. Impoundment details

All information should correspond with any maps and drawings submitted with this application

2.1 Provide details of all impoundment points. For structures spanning a watercourse, provide a National Grid Reference for each bank. If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

Impoundment location name / reference	National Grid Reference for each bank, looking downstream (12 digit)	
	Left bank	Right bank
Extraction point (See **HyR proposal v13.pdf** for more details)	SH7616745675	SH7616745675

2.2 Please provide a full description of the impoundment, outlining its purpose and how it will operate. If this information is detailed in a supporting document, provide the document title or reference in the space below.
If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

See **HyR proposal v13.pdf**

3. Description of impoundment

3.1 Name of watercourse

Afon y Foel

3.2 Will your proposed impoundment result in a change to the wetted perimeter (downstream) or new submerged areas behind (upstream of) the impounding works?
No ☒ Yes ☐ If yes, ensure this is shown on any map or drawings submitted

3.3 Will the ponded area created by the impoundment be lined? No ☒ Yes ☐
If yes, give details.

3.4 Give the height of the impoundment structure, from the downstream toe to crest or top of spillway (in metres above Ordnance Datum). If the proposal involves an existing impoundment, state the change in height (in millimetres).

See Weir design details v3a.pdf plus drawings HyR_181102A.pdf, HyR_181105A.pdf and HyR_181106C_rev1.pdf

3.5 What is the overflow or crest level of the impoundment (in metres above Ordnance Datum)?

Approximately 421.695 m (see *Weir design details v3a.pdf*).

3.6 What is the proposed capacity of the impoundment when full to spillway level (in cubic metres)?

0.11 m^3. (increase in level of 56 mm over an area of 2m^2 above the screens);
0.16 m^3 (contents of plunge pool basin)
0.5 m^3 (increase in level of 100 mm over an area of 5 m^2 above barrage).

3.8 Does the proposal involve the controlled release of water to safeguard downstream flows? No ☐ Yes ☒ If yes, provide details

Please see **HyR proposal v13.pdf**, **Justification for the abstraction regime.pdf** and **Weir design details v3.pdf**
At flows below Q95 (4 litres/sec) the extracted flow is throttled by an orifice allowing no more than 0.6 litres/second. Since the Q99.9 flow for the driest month of the year is 1.8 litres/sec this throttling should be sufficient to safeguard the downstream flow in any foreseeable conditions. As a further safeguard, at stream flows below 2.1 L/s most of the flow would pass over a section of the Coanda screen that has its slots sealed up (Weir design details v3a.pdf fig.9). The extractable flow is then more severely limited and will not exceed 0.05 L/s if the stream falls below 0.9 L/s.

3.9 Is the impounded water to be used for a subsequent purpose? No ☐ Yes ☒
If yes, provide details (for abstractions, state the daily and annual quantities in cubic metres).

Hydro-power: 1279 m^3 daily max, 293314 m^3 annual maximum possible (in practice likely to be significantly less, see *Justification for the extraction regime v5.pdf*).
Domestic use: 1.48 m^3 daily max, 314 m^3 annual max

3.10 How will the impounded area be filled initially, and subsequently refilled if applicable?

Not applicable.

4. Fish and eel passage

4.1 Confirm the fish species present at your site.

None seen. The extraction site is above two major waterfalls (perhaps 8 m high) so is not a viable spawning location for migratory fish.

4.2 Complete the table below with full details of the measures you intend to take to safeguard these fish species.

	Intake	Outfall
Type of fish screen	Coanda	Wire mesh
Screen aperture size (mm)	1 (slots)	10
Screen height and width (mm)	i. 100 × 200 (partially obscured). ii. 216 × 600 mm	140 mm diameter (minimum)
Type of upstream fish passage	Screens replace an existing 48 cm waterfall with 3 jumps not exceeding 25 cm.	
Proposed flow for fish pass (m/s)	n/a	
Type of downstream fish passage	Over the screen fairings. There are plunge pools of at least 300 mm depth below each screen and below the barrage notch (see *Weir design details v3a.pdf*).	

5. Construction, maintenance and operation

5.1 Provide details of maintenance or activities relating to the operation of the impoundment. If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

See **HyR proposal v13.pdf** for construction and operation details and **Weir design details v3.pdf** for the impoundment design calculations.

Routine inspection will check for and remove any debris collecting above the screens and wipe off any algae and water weed. A sun screen plate e.g. 1 m^2 about 300 mm above crest level may also be added to minimise algal growth and as a frost guard. Slotted screens will be replaceable in case of damage and to allow access to the metering orifice inside the smaller screen box.

5.2 Provide details of diversion works or removal of existing works.

See **HyR proposal v13.pdf** pages 11-14. These works constitute "Works that temporarily divert water in the immediate vicinity during construction" as mentioned on the NRW Low Risk Impoundment web page and thus do not require their own WRE form.

6. Planning application

Have you sought advice on your planning application?

No ☒ Yes ☐

If yes, submit a copy of the Planning Authority's response.

7. Declaration

Please see Guidance Note WRX for details of who can sign this section and note the information in that document relating to the Data Protection Act 1998.

By signing below, you are declaring that as far as you know and believe the information given in this form, on any map and in any supporting or additional information, is true.

Signed	
Print name	R.W.Moss
Position	Cottage owner and engineer.
Date	2nd November 2018

Application Checklist

Please tick the following checklist items to indicate that you have included the required information. If any sections of the form are left blank and no supporting information submitted, where we have insufficient information to make a decision on your application, we will return your application to you.

Essential:

Form WRA completed, if there have been any changes since pre-application an updated Form WRA is required ☒

Map with all impoundment points and new wetted perimeters/submerged areas clearly marked ☒

Drawings and Design Statement ☒

State number of continuation sheets (enter 0 if none included) ☐

Attached files :

- **HyR proposal v13.pdf**
- **Weir design details v3a.pdf**
- Drawings **HyR_181102A.pdf, HyR_181103A.pdf, HyR_181105A.pdf, HyR_181006C_rev1.pdf, HyR_181006B-1.pdf** and **HyR_181006A.pdf**
- **Justification for the extraction regime v5.pdf**
- **Ecological surveys Hafod y Rhedrwydd.pdf**
- Emails from the National Trust showing agreement in principle

(see also pre-application **Low_Flows 530_18 Hafod y Rhedrwydd.pdf** and **HyR geomorphology survey 4.pdf**)

Where relevant:

Form WRD completed, if your proposal also requires an abstraction licence ☒

Stage 1 photo survey (contact us for more details on this requirement) ☒

Letter of authorisation from the applicant, allowing an agent to act as signatory ☐

Further information requested in our pre-application response letter to you ☐

Planning Authority response, where available ☐

Additional supporting information - please list below: