

Application No:	NPS/WR/001084	Licence Serial No:	WA/056/0032/002
-----------------	---------------	--------------------	-----------------

Please quote the serial number in all correspondence about this licence



Asiantaeth yr
Amgylchedd Cymru
Environment
Agency Wales

FULL LICENCE TO ABSTRACT WATER

The Environment Agency ("the Agency") grants this licence to:-

NIGEL PRICE ("the Licence Holder")

Glandwr Farm
Llanover
Abergavenny
NP7 9ER

This licence authorises the Licence Holder to abstract water from the source of supply described in the Schedule of Conditions to this licence and subject to the provisions of that Schedule. The licence becomes effective on the relevant date shown below and shall remain in force until the date of expiry shown below subject to condition 9.4.

Signed

Date of Issue 11th September 2009

Date of expiry 31st March 2026

Permitting Team Leader (Water Resources)
National Permitting Service, Cardiff

Environment Agency
Permitting Support Centre
Water Resources
PO Box 4209
Sheffield
S9 9BS

The licence should be kept safe and its existence disclosed on any sale of the property to which it relates. Please read the 'important notes' on the cover to this licence.

Note: References to "the map" are to the map, which is attached to this licence.
References to "the drawing" are to the drawing, which is attached to this licence
References to "the Agency" are to the Environment Agency or any successor body.

Environment Act 1995
Water Resources Act 1991 as amended by the Water Act 2003
Water Resources (Abstraction and Impounding) Regulations 2006

SCHEDULE OF CONDITIONS

1. SOURCE OF SUPPLY

Inland water an unnamed stream in the headwaters of the Nant Rhyd y Meirch, Upper Llanover, Monmouthshire.

2. POINT OF ABSTRACTION

At National Grid Reference SO 28975 07675 at the point marked "A" on the map.

3. MEANS OF ABSTRACTION

Intake works and gravity feed pipe with a diameter of 200 mm, as detailed on plans and specifications 3, 4 5, 6, 7, 8 and 8a submitted to the Agency on 25th March 2009 controlled by the design of the intake works (subject to condition 9.3).

4. PURPOSE OF ABSTRACTION

Power production – hydro-electric power generation.

5. PERIOD OF ABSTRACTION

All year.

6. MAXIMUM QUANTITIES OF WATER TO BE ABSTRACTED DURING THE SPECIFIED PERIOD

180 cubic metres per hour
4,320 cubic metres per day
810,475 cubic metres per year
At an instantaneous rate not exceeding 50 litres per second

Note: an hour means any period of 60 consecutive minutes, a day means any period of 24 consecutive hours and a year means any period of 12 consecutive months.

7. MEANS OF ASSESSMENT OF WATER ABSTRACTED

- 7.1 i) The Licence Holder shall measure quantities of water abstracted by reference to the electrical output of the turbine.
- ii) The Licence Holder shall use Flow Measurement Analysis, as outlined in the calculation checklist attached

to this licence, to establish the relationship between electrical output and quantities of water abstracted.

iii) The Flow Measurement Analysis shall be undertaken to the satisfaction of the Agency before the commissioning of the scheme and at intervals as requested by the Agency thereafter. The Licence Holder shall retain evidence of the Flow Measurement Analysis for future reference by the Agency.

7.2 The Licence Holder shall cease abstraction immediately if there is evidence to demonstrate that the Flow Measurement Analysis is no longer accurate and abstraction in excess of authorised rates as specified in condition 6 is taking place. In such instances the Agency may require the Licence Holder to carry out a metered calibration for greater accuracy.

8. RECORDS

i) The Licence Holder shall take and record readings of the electrical output and the corresponding quantity of water abstracted for each week, as determined using the results of the Flow Measurement Analysis specified in condition 7.1 above, during the whole of the period during which abstraction is authorised or as otherwise approved in writing by the Agency.

ii) A copy of the record or summary data from it shall be sent to the Agency within 28 days after 31st March in each year or within 28 days of being so directed in writing by the Agency.

iii) Each record shall be kept and be made available during all reasonable hours for inspection by the Agency for at least 7 years.

9. FURTHER PROVISIONS

9.1 No water shall be abstracted unless the rate of flow in the unnamed stream immediately downstream of the authorised point of abstraction, point "A" as specified in condition 2 above is i) equal to or greater than 10 litres per second and ii) the abstraction hereby licensed does not cause the flow immediately downstream of point "A" to fall below such rate.

9.2 No water shall be abstracted through the turbine if the Licence Holder is unable to generate electricity.

9.3 The Licence Holder shall construct, operate and maintain the intake works in accordance with the plans and

specifications specified in condition 3 so as to ensure compliance with the conditions of this licence.

- 9.4** i) Although the licence may otherwise remain in force until 31st March 2026 this licence shall cease to be of any effect if the abstraction it authorises has not commenced by 11th September 2012.
- ii) The Licence Holder shall notify the Agency in writing at least 2 weeks before abstraction under this licence is due to commence.
- 9.5** Water shall be returned to the unnamed stream at National Grid Reference SO 29625 07700 at the point marked "Q" on the map.
- 9.6** i) Before any abstraction takes place the Licence Holder shall install to the satisfaction of the Agency a 4 mm vertical aquashear screen with perforated plate on the intake to prevent the entrapment, entrainment or impingement of fish. The Licence Holder shall provide and install the screen to the satisfaction of the Agency.
- ii) The Licence Holder shall maintain the aquashear screen and records of any maintenance carried out to the satisfaction of the Agency.
- 9.7** The minimum value, as referred to in section 46(2A) Water Resources Act 1991, is 810,475 cubic metres per year and the authorised abstraction quantity in this licence can be reduced to that value.

REASONS FOR CONDITIONS

Note: the following information is provided for information only. It does not form part of the licence.

Condition 9.1 - To ensure a flow is maintained in the watercourse in order to maintain the riverine habitat for the conservation of the flora and fauna.

Condition 9.6 - To prevent the entrapment, entrainment or impingement of fish.

Condition 9.7 – To ensure compliance with section 46(2A) Water Resources Act 1991.

IMPORTANT INFORMATION

Impoundment licence WA/056/0032/001 has been issued to facilitate the abstraction of water under this licence as outlined in the plans and specifications submitted to the Agency.

The Licence Holder shall use water abstracted under the terms of this licence in an efficient manner. The Agency will have regard to its Guidance on Water Efficiency (or equivalent guidance) in determining whether water is being used efficiently and any measures required to meet this condition. This is in accordance with the Agency's responsibilities under the Water Resources Act 1991 to secure the proper use of water (Section 19(1)(b)).

Screening (as outlined in plans and specifications (condition 3) and condition 9.6): The Agency will have regard to its Screening for Intakes and Outfalls: a Best Practice Guide (or equivalent guidance) in agreeing where, how and what type of fish screens should be installed and in judging whether they are necessary to require repair or replacement of the fish screens.

Licence Serial No:	WA/056/0032/002
--------------------	-----------------

Calculation Checklist

This checklist should be used to record the site data and calculate the HAF_{site} .

Site Data	
Site name	Glandwr Farm
Address	Glandwr Farm, Llanover, Abergavenny NP7 9ER
License serial No.	WA/056/0032/002
Contact name	Nigel Price
Contact telephone	
Contact email	Nigel.p@hotmail.co.uk

Performance Data		
Parameter	Value	How was the parameter determined?
$H_n (P_{max})$	30	
$\epsilon_{turbine} (P_{max})$	0.82	
$\epsilon_{transmission} (P_{max})$	0.99	
$\epsilon_{generator} (P_{max})$	0.92	

Calculation of $\epsilon_{system} (P_{max})$

$$\epsilon_{system} (P_{max}) = \epsilon_{turbine} (P_{max}) \times \epsilon_{transmission} (P_{max}) \times \epsilon_{generator} (P_{max})$$

$$= \boxed{0.82} \times \boxed{0.99} \times \boxed{0.92}$$
$$= \boxed{0.746}$$

Calculation of HAF_{site}

$$HAF_{site} = \text{Hydro Abstraction Factor for the site in question}$$

$$= 366.972 / (H_n (P_{max}) \times \epsilon_{system} (P_{max}))$$

$$= 366.972 / (\boxed{30} \times \boxed{0.746})$$

$$= \boxed{16.397}$$

The abstracted volume for the period can then be worked out using the formula:

$$V_{period} = kWh_{period} \times HAF_{site}$$

Glandwr Fish Pass at Intake

22nd May 2019



