

Water Resources Decision Statement for an application for a water abstraction licence on the Llyn Padarn, Caernarfon, Gwynedd

In this document, Natural Resources Wales ('NRW') means the Natural Resources Body for Wales ('the NRW') established by Article 3 of the Natural Resources Body for Wales (Establishment) Order 2012.

Please note that on 01 April 2013, the functions previously conducted by the Countryside Council for Wales ('CCW'), Forestry Commission Wales ('FCW'), and the functions of the Environment Agency within Wales ('EA/EAW'), (CCW,FCW and EA/EAW together 'the Legacy Bodies') were transferred to NRW.

In determining this application, NRW has exercised its duties and powers under the Water Resources Act 1991 (as amended) and the Environment Act 1995 and has taken account of guidance issued by the Legacy Bodies where relevant.

Application number: WPCC2845

Licence number: WA/065/0016/007

NRW Area: North

Date of Application: 16/12/2014

Applicant details: Snowdonia Pumped Hydro Limited

Summary of the proposal: An application to install a new abstraction point via a pipe within the Llyn Padarn, Llanberis, Caernarfon, Gwynedd. The proposal is part of a development for a pumped storage hydropower scheme within the area. The abstracted water will initially be used to fill a lower reservoir at Glyn Rhonwy Quarry. The water within this reservoir will be pumped to an upper reservoir, Chwarel Quarry, and then dropped back into the lower reservoir via a turbine to produce electricity. This process will be repeated on a continual basis when electricity is required. This process is essentially a 'closed system' and once the bottom reservoir is filled (after approximately 2 years) the applicant wishes to abstract water as necessary for 'top up' of the lower reservoir (e.g. to replace evaporation losses). The abstraction rate for both the initial fill and top up is the same: 23.2 litres per second (l/s), 83m³ per hour, 2,000m³ per day.

Source of Supply: Inland water (lake) known as Llyn Padarn, Llanberis, Caernarfon, Gwynedd.

Points of abstraction and quantities: At National Grid Reference SH 57282 61168

Initial fill of reservoir	Top up of reservoir
83 cubic metres an hour	83 cubic metres an hour
2,000 cubic metres a day	2,000 cubic metres a day
550,000 cubic metres a year for a two year period	95,000 cubic metres a year

Means of abstraction: Pump.

Purposes of abstraction: Filling of initial reservoir & topping up of reservoir

Abstraction period: All year.

Case history: Pre-application submitted to Environment Agency Wales on 23/06/2012 which proposed to initially fill the lower reservoir solely from the collection of rainwater. It was confirmed by EAW on the 25/04/2012 that an abstraction licence was not required for this proposal as no abstraction was proposed.

On 04/04/2013 a new pre-application was submitted to NRW proposing to abstract water from the Llyn Padarn to fill the lower reservoir at a rate of 20,000 l/s, 72,000 m³ per hour, 504,000 m³ per day. A response was sent on 20/01/2014 advising that NRW had no objection to the proposal. It was recommended that a hands off flow equal to Q92 would be appropriate for the abstraction and included as a condition within any abstraction licence issued. Any licence would be time limited until 31/03/2025. It should be demonstrated that the impact of the proposed abstraction will not adversely impact upon the ecology of the Llyn Padarn.

Justification of quantities: The applicant has applied to abstract water for the eventual purpose of generating electricity. The pumped storage system allows for electricity to be generated in times of peak demand such as morning and evenings, which is a more efficient use of the water abstracted. Once the water abstracted has filled the lower reservoir, the annual abstraction quantity will be reduced to the lower rate for topping up purposes as and when required. This ensures that once the scheme is operational, less water resources is tied up within the scheme. Therefore, the quantities applied for are considered to be reasonable and fully justified.

Resource assessment: The Catchment Abstraction Management Strategy (CAMS) resources assessment status for this area is 'no water available'. All new licences will be subject to Hands Off Flow restrictions so that abstraction cannot take place during periods of low flow.

Impact assessment of proposal: The proposal is located within Llyn Padarn SSSI, therefore NRW are required to undertake an assessment of the impact of the proposal upon the SSSI, please see Conservation Issues section below. The proposal is in accordance with pre-application advice issued by the NRW and includes the inclusion

of a hands off flow to protect low flows and the ecology of the lake and downstream users.

Statutory Consultation: No concerns were raised by any of the external bodies consulted as part of the determination of this application.

External Representations: The proposal was advertised in the Caernarfon and Denbigshire Herald on 26 February 2015. In addition, a public drop in day was held at Electric Mountain, Llanberis on 18 March 2015. 28 responses of representation were received with regard to the application. The following concerns were raised.

Issued raised by representation	NRW response
1) The abstraction of water will lead to negative impact upon the features of Llyn Padarn SSSI, in particular the Arctic Charr present. The proposal will include many 'operations likely to cause damage' as included within the protected site citation, and should therefore not be allowed.	A full assessment of the impact of the abstraction upon Llyn Padarn has been undertaken via an Appendix 4 document. The abstraction licence contains conditions to protect the designated features including screening at the abstraction point and a Hands off Level to prevent abstraction when there are low flows within the catchment. No significant impact upon the SSSI is anticipated by this proposal.
2) How will the impact of the proposal affect downstream water users, in particular the abstraction for Seiont Fisheries?	A hands off level condition has been included within the abstraction licence linked to Pablic Mill gauging station on the River Seiont, downstream of the Llyn Padarn. When flows are at Q92 (equal to 0.343metres at the gauging station) no abstraction can take place. The Q92 flow takes into account of protecting the downstream users including licence 23/65/16/65 which is for the Seiont, Gwyrfaï & Llyfni Anglers Society.
3) The proposed abstraction may impact upon the water quality within the Llyn Padarn	As the volume of water to be abstracted from the Llyn Padarn is a small volume in comparison to the volume of water within the Llyn Padarn, no impact to water quality is anticipated. The abstraction will equate to a draw-down of less than 2 millimetres per day (less than 1 metre over a year), which is within the natural fluctuation of the lake. The inclusion of the hands off level this will ensure that when flow levels are low within the catchment no water can be abstracted.
4) There will be impact to the Llyn Padarn due to the discharge of water during construction and operation of	Discharges into the Llyn Padarn are not relevant when assessing the abstraction licence application.

the pumped storage scheme which will be detrimental to Llyn Padarn	Discharges to the Llyn Padarn may require consenting from NRW under the Environmental Permitting Regulations 2010.
5) The proposed development area for the pumped storage scheme used to store World War Two chemical weapons and other ordnance, how will the development of the reservoirs ensure that no chemicals are released into the environment and Llyn Padarn?	Construction of the reservoirs is part of the overall construction of the pumped storage hydropower scheme and is outside the scope of assessing the impact of the abstraction licence under the Water Resources Act 1991.
6) There is a risk of flooding as a result of water lost from the top quarry flowing into the lower quarries, in addition to landslips by the development.	This issue is not related to assessing the impact of the abstraction upon the Llyn Padarn and is therefore not relevant to this application. This issue is considered as part of the planning application process, which NRW are a consultee.
7) The location of the proposed water intake pipe is located within an area of the lake used primarily for recreational activity such as swimming, canoeing and kayaking. During construction and once in place the abstraction could prevent local water use activity and impact upon local business and tourism. The NRW has a remit to take into account impacts to recreation – how will this be achieved?	NRW's function with regard to impact to recreation during construction is part of the planning process and therefore not relevant when assessing the abstraction licence application. The NRW are satisfied that the impact of the abstraction upon the lake level will not impact upon recreational use. The lake will remain within natural fluctuation levels whilst abstraction is occurring. During low flows within the catchment no abstraction can occur.
8) There are nesting birds such as peregrines and choughs (Schedule 1 list birds under the Wildlife and Countryside Act 1981) within Glyn Rhonwy and the surrounding which area which could be impacted upon during any buildings works.	This issue is not related to assessing the impact of the abstraction upon the Llyn Padarn and is therefore not relevant to this application. Impact of the proposal during construction is assessed as part of the planning application process, to which NRW are a consultee.
9) NRW will not adequately monitor any breaches of legislation relevant to construction and operation of the pumped storage scheme. NRW have recently been taken to court with regards to inadequate action	In determining this application, NRW assess the impact of the application upon water resources. The subsequent monitoring and compliance of water abstracted is not relevant as part of the determination process of the application.
10) The development of a pumped storage scheme should not be allowed as it is an industrial activity which will be detrimental to the local tourism industry	This concern raised is not relevant when assessing the impact of the abstraction upon water resources within the catchment. The impact of the proposal is assessed as part of the planning application process, to which NRW are a consultee.

<p>11)The conveyance of electricity generated by the scheme to the National Grid has not been secured by the developer, there is a danger that more overhead power lines will be constructed within an area of outstanding natural beauty.</p>	<p>This concern is not relevant when assessing the impact of the abstraction upon water resources within the catchment. Impact of the development is assessed as part of the planning application process, to which NRW are a consultee.</p>
<p>12)The power output of the development could be match by increasing the electricity generation of the already existing pumped storage scheme at Dinorwig, therefore this project should not go ahead.</p>	<p>The application has been assessed with regard to the impact of the abstraction upon water resources within the catchment. The NRW has concluded that there is enough water available to support this abstraction and therefore issue an abstraction licence.</p>
<p>13)Can community benefits be included with this proposal such as those included within the Abergwyngregan scheme?</p>	<p>The representee has not provided an explanation in relation to 'community benefits' or details of the scheme to which they referred. In exercising its functions NRW must have regard to the health and social well-being of individuals and communities and the economic well-being of individuals, businesses and communities. However this duty does not include a power to require operators to provide or include specific community benefits as part of their abstraction scheme.</p>
<p>14)The ecology and protected species surveys carried out by the developer are not satisfactory</p>	<p>NRW are satisfied that there will not be significant impact upon the Llyn Padarn SSSI by issuing the abstraction licence. The ecology and protected species surveys submitted by the developer are part of the overall pumped storage hydropower development and not relevant to determining the abstraction licence application.</p>
<p>15)The proposed traffic construction route via Cefn Ddu is not suitable.</p>	<p>This is not relevant in determining the abstraction licence application. This issue is part of the planning application process, to which NRW are a consultee.</p>
<p>16)Small fry or their food could be abstracted by the intake pipe.</p>	<p>The abstraction licence requires the Licence Holder to install a screen of 2 millimetre perforations at the point of abstraction prior to commencement of abstraction. This will prevent in ingress of fish and vegetation into the abstraction pipe.</p>
<p>17)How will the abstraction impact upon the lakes Bathing Water status?</p>	<p>NRW are satisfied that sufficient water remains within the catchment to protect the ecology and water quality as a hands</p>

	off flow will be included within the abstraction licence; therefore the bathing water classification will not impacted upon by this proposed abstraction.
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Protected Rights: Protected rights have been considered and measures put in place, through licence conditions, to ensure there is no risk of derogation as a result of this proposal. No lawful users of water have been identified.

Conservation Issues: The proposal is located within Llyn Padarn SSSI. The Llyn Padarn is designated a SSSI because of its genetically distinct race of Arctic Charr as well as aquatic plants including the floating water-plantain and small quillwort. Otters and small numbers of wildfowl frequent the lake and the outflow. NRW is of the opinion that the proposal is not likely to have a significant effect upon the Llyn Padarn SSSI. An Appendix 4 Assessment has been completed and concluded that as the abstraction is relatively small in comparison to the volume of Llyn Padarn; and with the inclusion of the hands off level and screening, sensitive species such as Arctic Charr will not be impacted upon. The draw down of the lake level will be small and reflect the natural fluctuations in the lake level.

Costs/ Benefits: The applicant will benefit from the use of water to produce power.

The applicant will incur the cost of installing and maintaining the method of abstraction and of assessing the volumes of water they abstract.

NRW will incur the cost of determining the application.

In determining the application in accordance with local and national policy, NRW is fulfilling its duties as a regulator.

Time limiting the abstraction will allow the abstraction be reviewed and if necessary be amended or revoked if climate change or other factors require it.

Biodiversity and sustainable development: NRW considers that the proposal will have no appreciable adverse effect on downstream water resources, ecology, fisheries, protected rights and lawful users and conservation.

The inclusion of measuring and recording conditions will help prevent over-abstraction and the possibility of environmental damage.

The proposal accords with local water resources policy and is sustainable.

Social and Economic welfare of rural communities: No adverse effects upon the social and economic wellbeing of local communities are perceived as a result of the proposal. There may be short term impacts during the construction of the abstraction, however these can be addressed as part of the planning process for the proposal.

The scheme may encourage others to produce energy from renewable sources.

Conclusion and recommendation: Full and due consideration has been given to any representations made, and due regard has been taken of protected rights and other lawful users.

The conditions incorporated on the abstraction licence are considered to be necessary and reasonable in the light of the available and presented evidence. The conditions are also considered to be consistent with appropriate standards for enforcement by NRW.

NRW therefore recommended approval of the application (as modified) and issue of licence number WA/065/0016/007 with the conditions as drafted.

Contact the Natural Resources Wales team responsible for this decision:

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