

Glyn Rhonwy Pumped Storage Development Consent Order

Deadline 2 – Applicants response to Relevant Representations



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1 SUMMARY

1.1 Background

1.1.1 On 16th March the Examining Authority (ExA) issues a timetable for the examination in accordance with Rule 8 of the Infrastructure Planning (Examination Procedure) Rules 2010.

1.1.2 This Rule 8 letter requested the following submissions to be made available by Deadline 2 on 13th April 2016.

- Responses to Examiners First Written Questions
- Responses to Relevant Representations
- Revised Draft DCO
- Statements of Common Ground
- Comments on post hearing documents (written summary of oral cases)
- Responses to comments on any additional representations and submissions received prior to the Preliminary Meeting
- Comments on any further information requested by the ExA and received at Deadline 1
- Any other information under Rule 17 requests

1.1.3 This document provides the Applicants response to the Relevant Representations as requested within the ExAs First Written Questions.

1.1.4 Cross-references are provided to other submission documents where necessary.

2 Public Health England

Response received

Thank you for your consultation regarding the above development. Public Health England (PHE) welcomes the opportunity to comment on the proposals and Environmental Statement (ES) at this stage of the project. Our response focuses on health protection issues relating to chemicals and radiation. Advice offered by PHE is impartial and independent.

PHE, including PHE's Centre for Radiation, Chemical and Environmental Hazards (Wales), has considered the submitted documentation. Whilst we are broadly satisfied with the conclusions drawn within the ES, we note however, that our previous request (dated 5th March 2015) in considering the potential health impact associated with electric and magnetic fields (EMF) has not been specifically addressed. It is important that all aspects of the development are considered at this stage and would request this aspect be undertaken for PHE to consider.

Should the applicant seek any specific advice prior to the submission, PHE of course would be pleased to assist.

Snowdonia Pumped Hydro's Response

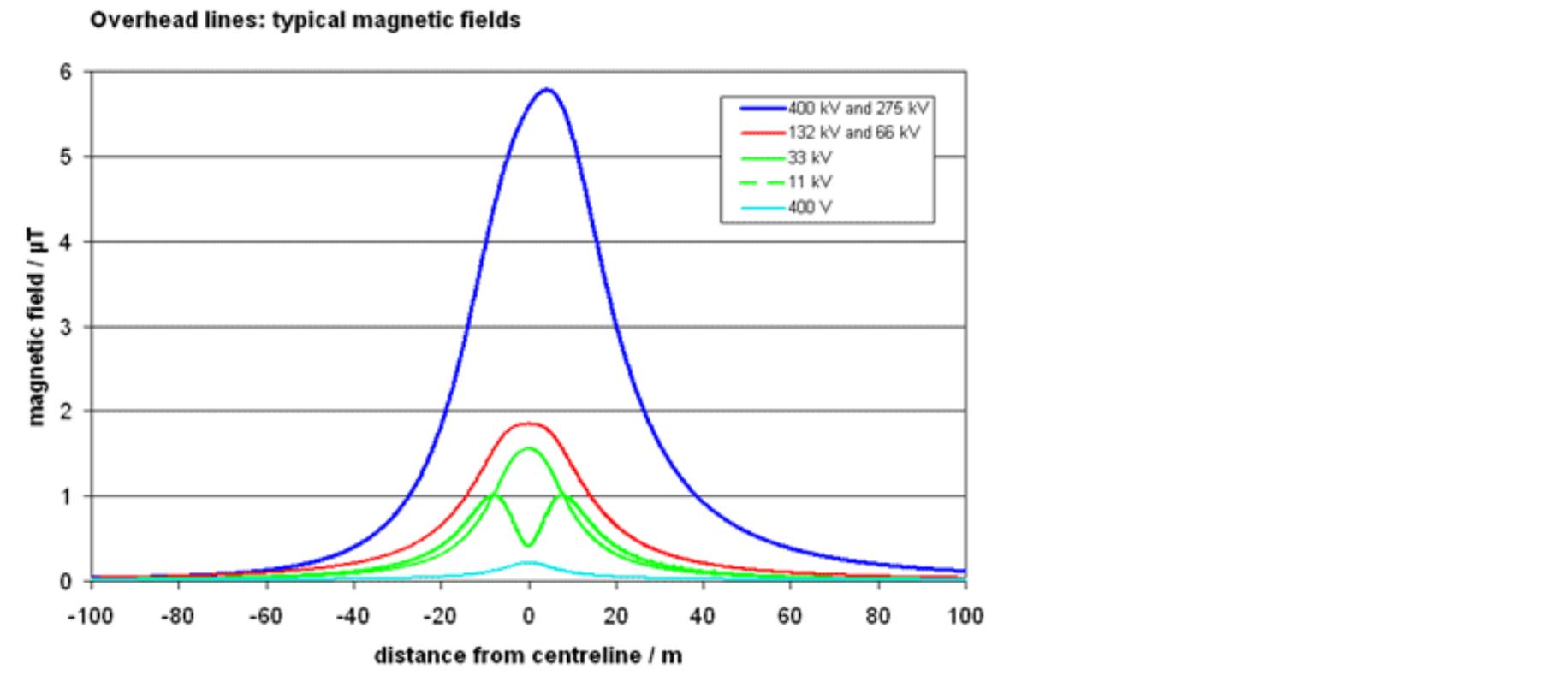
Due to the size of the equipment and location within an enclosed building, it is unlikely that the scale and nature of the electrical equipment within the power house will cause any significant effects to local residents.

In 1998, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) issued revised guidelines reference level

of 100 μT for public exposure to magnetic fields at power frequencies . In 2010, the ICNIRP increased this reference level to a less stringent 200 μT , although the previous remains the basis of UK guidance

Underneath power lines, magnetic fields can be around 20 μT , which is considerably lower than the ICNIRP guidelines. The magnetic field also reduces with distance as demonstrated in an example on overhead lines in Figure 1.

Figure 1. Typical magnetic fields from overhead lines



It is anticipated that the above ground structures containing electrical equipment will be installed at least 400m from any residential area, therefore it is expected that the magnetic field level will be significantly less than 20 μ T. Accordingly, the authorised development will operate in compliance with the ICNIRP guidelines.

The evidence to date suggests that in general there are no adverse effects on the health of the population of the UK caused by exposure to ELF EMFs below the guideline levels .

i <http://www.emfs.info/limits/limits-organisations/icnirp-1998>

ii <http://www.emfs.info/limits/limits-organisations/eu-1999>

iii <http://www.who.int/peh-emf/publications/facts/fs322/en/>

iv <http://www.emfs.info/sources/overhead/>

v <http://infrastructure.planninginspectorate.gov.uk/projects/wales/glyn-rhonwy-pumped-storage/?ipcsection=relreps&relrep=33>

3 Public Health Wales

Response received

In Wales, the statutory function for public health is delivered through Health Boards with specialist support from Public Health Wales as necessary. We have consulted our technical advisors within Public Health Wales as well as Public Health England PHE CRCE – Wales. Our comments are based on the information contained within the application documentation to date. We have divided our comments to cover both the operational and construction phases.

Note: In this context we consider off-site sensitive human receptors may include people living in residential premises; people working in commercial, and industrial premises and people using transport infrastructure (such as roads and railways), recreational areas, and publicly-accessible land.

Consideration should also be given to environmental receptors such as the surrounding land, watercourses, surface and groundwater, and drinking water supplies such as wells, boreholes and water abstraction points.

Overall the submitted Environmental Impact Assessment (EIA) has acknowledged public health risks.

Operational Phase

It will be vital to mitigate from the outset, impacts from noise and vibration that may arise from surface, underground operations and nighttime water pumping. The final project designs and operational plans to protect sensitive human receptors from noise

and vibration should be agreed in conjunction with the local authority.

Advice on mitigation of any possible health effects associated with the electric and magnetic fields around substations and the connecting cables or lines has been previously supplied by PHE – we have however supplied again for the attention of the developer in Appendix 1.

Subject to the above impacts from the operational phase as described, do not present a concern for public health.

Construction Phase

We understand that the construction phase may last circa 5 years. We appreciate this phase will comprise a number of individual elements ultimately linked by underground water pipelines / tunnels.

Potential impacts upon health are possible during this phase unless they are avoided or mitigated. Impacts from construction and material handling include dust and invisible particulates (point source, fugitive and traffic-related), noise and vibration (including from rock blasting).

We therefore recommend that the developer

1. Agrees to and operates a Construction Environmental Management Plan (CEMP) which outlines mechanisms to respond to any complaints during construction.

2. Liaises with

- the local authority for matters relating to noise, vibration, odour, and dust nuisance.
- the local authority regarding any impacts on existing or proposed activities on local air quality.
- the local authority to agree mechanisms to respond to any complaints from the community during construction, operational and

any decommissioning phases.

3. Has regard to any cumulative impacts, including those arising from associated development, other existing and proposed development in the local area and new vehicle movements associated with the proposed development

We hope that the above is useful but should you have any questions or concerns please do not hesitate to contact us.

Yours sincerely

Appendix provided on EMF assessment and guidance

Snowdonia Pumped Hydro's Response

The Applicant has considered both potential construction and operational noise effects within Chapter 13 of the ES. This includes blasting and drilling in construction and low frequency noise during operation. Mitigation measures during construction will include the preparation and implementation of the Code of Construction Practice (CoCP) which includes a Construction Noise Management Plan as required by DCO Requirement 6. The contents of the noise management plan is outlined in ES Chapter 16, detailed in Requirement 11 and is subject to the approval of Gwynedd Council prior to construction works commencing.

An operational noise management plan is required by DCO Requirement 7 and must include the matters specified in Requirement 11. During operation, the above ground power house building and underground turbine hall will have the appropriate acoustic attenuation as required, and the Applicant will be required to undertake an operational noise assessment as required by the operational noise management plan .

All impacts associated with air quality have been assessed within Chapter 14 of the ES including impacts from dust, handling of materials, rock blasting, excavations and HGV movements as a result of construction activities. The CoCP will contain a Dust

Management Plan (DMP) (as required by Requirements 6 and 10 of the DCO) to be approved by NRW and Gwynedd Council prior to the commencement of construction. In addition, prior to construction commencing, the Applicant will undertake baseline air quality monitoring (as required by Requirements 7 and 14). Limits on particulates will be agreed with Gwynedd Council subject to the results of the baseline air quality monitoring and the ongoing monitoring programme will include agreement of the location and frequency of air quality monitoring which will be undertaken during the construction phase.

It is proposed that a local liaison group will be set up to keep the local community informed of construction activities and when potential disruptive works will be undertaken. A dedicated Environmental Liaison Officer will be responsible for liaison with the local community and to be the dedicated point of contact.

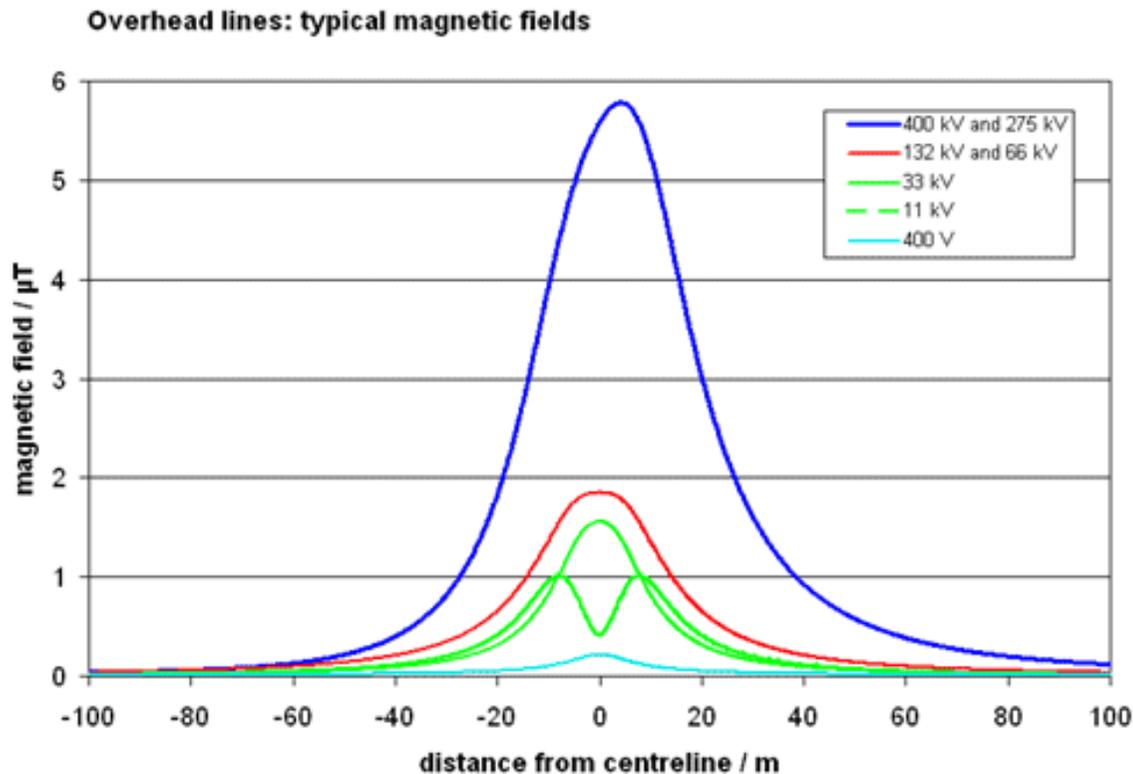
The Statement of Statutory Nuisance (document reference 5.02) outlines the complaints procedure which will be implemented for the Development with respect to any nuisance events involving noise, dust or emissions.

The Applicant is in consultation with Gwynedd Council over such matters and will seek to secure the appropriate mechanisms for complaints, appropriate communication protocols and the other matters through either the DCO Requirements or appropriate consenting regime. The DCO Requirements will be the fundamental mechanism to secure the mitigation measures required to avoid, reduce or remedy any potential adverse effects, and these include those in relation to human health.

In 1998, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) issued revised guidelines reference level of 100 μT for public exposure to magnetic fields at power frequencies. In 2010, the ICNIRP increased this reference level to a less stringent 200 μT , although the previous remains the basis of UK guidance

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x <http://infrastructure.planninginspectorate.gov.uk/projects/wales/glyn-rhonwy-pumped-storage/?ipcsection=relreps&relrep=33>

4 NRW

Response received

Introduction

The purpose of the Natural Resources Body for Wales (NRW) is to ensure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used. Our functions are set out in the Natural Resources Body for Wales (Functions) Order 2012. Our advice and comments to the Planning Inspectorate (PINS) are therefore provided in the context of this remit.

Our comments are made without prejudice to any further comments we may wish to make in relation to this application and examination whether in relation to the Environmental Statement (ES), provisions of the draft Development Consent Order ('DCO') and its Requirements, Statements of Common Ground (SoCG) or other evidence and documents provided by Snowdonia Pumped Hydro ('the Applicant'), the Examining Body or other interested parties. The following paragraphs comprise our relevant representation as a Statutory Party under the Planning Act 2008 and Infrastructure Planning (Interested Parties) Regulations 2010 (as amended) and as an 'interested party' under s102(1) of the Planning Act 2008.

We have provided pre-application advice to the Applicant and their consultants periodically since 2011 as part of the previous

planning application/permission process, and subsequently before submission of the DCO application. More recently the Planning Inspectorate sought our scoping advice before adopting its scoping opinion. Our scoping advice was sent to the Planning Inspectorate in our letter of the 4th of February 2015. Subsequently we have responded to a draft Environmental Statement consultation under Section 42 of the 2008 Act, our letter dated 12th March 2015. We shall continue to provide advice to the Applicant with the aim of reaching positions of agreement and common ground, wherever possible, prior to and during the examination.

Our relevant representation is based solely on the information provided within the application documents. Any changes in our position will be reflected in our written representation and Statement of Common Ground (SoCG). These relevant representations contain a summary of what NRW consider to be issues for which our continued involvement is required in relation to the DCO application, and indicate the principal submissions that we currently wish to make. NRW will develop these points further as is appropriate during the examination process; however, we may have further or additional points to make, particularly if further information about the project is submitted or becomes available.

Environmental Permits

The requirement for an Environmental Permit is governed by distinct and separate legislation, namely the Environmental Permitting Regulations 2010. Such applications are determined by NRW's permitting function, which is distinct and separate to NRW's advisory role by virtue of its interest in the Development Consent Order application. Notwithstanding this internal separation of function within NRW, we will endeavour to provide the Examination with an update as to progress of any permit applications, however it should be noted that we will not be in a position to comment in detail on the substance or merits of any particular application.

We understand that as of yet, NRW has not received any Environmental Permit applications for the required 6 discharges from the scheme. We strongly encourage the applicant to submit their Environmental Permit applications as soon as possible so that the permitting process can run concurrently with the DCO examination process. National Policy Statement (EN1) advises “Wherever possible, applicants are encouraged to submit applications for Environmental Permits and other necessary consents at the same time as applying to the IPC for development consent.” This will allow Natural Resources Wales to proceed with its assessments, and it will then be much more likely to be in a position to indicate whether it is likely to grant a permit before the DCO examination closes.”

Annexe C of the No Significant Effects Report includes an Operational Discharges Technical Note point 5, dated September 2015 argues that only 4 Environmental Permits would be required for the proposed development. We were consulted by the applicant on this note, and we dismissed the applicants’ justification for only 4 Environmental Permits, and confirmed to the applicants that 6 Environmental Permits would be required.

NRW had some concerns over the sampling regime and data contained within the Water Framework Directive Compliance Assessment report, Appendix 9.1 of the Environmental Statement. However, following further discussions with the applicant, these concerns have been alleviated.

An Environmental Permit for the initial filling of the development by abstraction from Llyn Padarn has already been granted, although the applicant have indicated to us that they may wish to vary that Permit (abstraction licence) to increase the rate of abstraction.

Contaminated Land.

Within the application, and specifically the Environmental Statement, previous contaminative land uses have been considered,

and a Land Discovery Strategy will be submitted as part of a DCO Requirement, which is consistent with our standard approach to deal with land contamination. Requirement 13 (c) requires the applicants to deal with and remediate any contamination that is identified.

Ecology

We are satisfied that the Environmental Statement has adequately assessed the ecological matters of the development.

We have considered the No Significant Effects report, document 5.03, within the application under the Conservation of Habitats and Species Regulations 2010 (as amended) and we agree with the conclusion that the proposal is not likely to have a significant effect on the Natura 2000 sites within pages 1 and 2 of the report.

As long as the mitigation measures, specified within the Schedule of Mitigation the Environmental Statement Volume 2B, Chapter 18, and within the Code of Construction Practice (CoCP), and its associated Plans, are adhered to, we believe that the proposed development will not have a significant impact upon these sites. This is also the case for Sites of Special Scientific Interest, Llyn Padarn SSSI, being the most relevant site as this is where the main discharge from the scheme will flow in to.

The relevant European Protected Species licence for bats which covers the whole scheme has already been granted, dated 27th March 2015.

Flood Risk

Flood risk from the development has been demonstrated that it can be managed from the Flood Consequences Assessment submitted with the DCO application. The Flood Risk from the operation of the proposed development will be managed by the Excess Water Management Strategy, which will be developed as a DCO Requirement.

The discharge rate for pumping during the initial dewatering exercise will need to be specified within the final Code of

Construction Practice that is consistent with the maximum discharge rate within any Environmental Permit.

Landscape

We agree with the updated assessment within Chapter 6.0 Landscape Effects 6.1.11 “due to more accurate mapping and modelling, the slate mounds are slightly bigger than those assessed in the 2012 assessment and as a result Figures 6.4a, 6.4b and 6.4l have been updated. The change, however, is not discernible and it is considered that the findings of the previous assessment remain unchanged”.

Development Consent Order

DCO Requirements will play an important role in securing appropriate environmental risk management measures and ensuring that the impacts of the development are minimised.

Relevant provisions will need to be developed further and approved by NRW during the course of the examination.

Article 17 of the draft Development Consent Order entitled “Discharge of Water”, also needs to refer to requirement 20 “Excess Water Management Strategy”.

Due to a number of plans that are requirements within the DCO, these should be developed concurrently so that they are consistent in their timescales and approach.

Resolution of Matters Raised

Please contact Gareth Thomas (glyn.rhonwy@cyfoethnaturiolcymru.gov.uk) should you require further advice or information regarding this representation.

Yours’ sincerely,

Richard Nines

Snowdonia Pumped Hydro's Response

The Applicant has been in regular liaison with NRW prior to submission of the DCO and continues to liaise with NRW over various aspects of this submission and the associated consents and licenses required for the construction and operation of the Development.

Since this response was received, six applications for discharge consents, as required under the Environmental Permitting Regulations 2010 (as amended), have been submitted for the discharges of water during the construction and operational phases of the Development. In addition, an application has been submitted to NRW to vary the existing abstraction license in order to charge or fill the Development with the required 1,300,000m³ of water from Llyn Padarn. We note the requirements in the Regulations and it is standard practice that these applications are submitted in parallel with the DCO submission. We have discussed the information required for these submissions with NRW and how mitigation will be secured, as much of this is duplicated with the DCO Requirements.

We have also provided further information to NRW as part of this application process and have assisted as required for the consultation process that they have undertaken. We await the determination of these applications in due course and will provide additional information as required.

We note the comments in relation to NRW accepting the conclusion of the ecology chapter, Habitats Regulation Assessment, contaminated land assessment and flood consequences assessment. All required mitigation measures as summarised in ES Chapter 18 Schedule of Mitigation will be secured through the DCO Requirements or a separate consenting regime as required. We note that NRW are satisfied on these assessments.

We will continue to liaise with NRW as appropriate on the discharge consent applications and abstraction license variation through their consultation and determination, and will progress the Management Plans outlined in the CoCP and in DCO Requirements 8, 9, 10 11 and 12 as appropriate.

Response received

NRW Response to the draft DCO dated 30 March 2016

1.1 The purpose of the Natural Resources Body for Wales (NRW) is to ensure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used. In this context sustainably means with a view to benefitting and in a manner designed to benefit the people, environment and economy of Wales now and in the future. Our functions are set out in the Natural Resources Body for Wales (Functions) Order 2012. Our advice and comments to the Planning Inspectorate (PINS) are therefore provided in the context of this remit.

1.2 The advice and comments contained in this Written Representation are provided as a Statutory Party under the Planning Act 2008 and Infrastructure Planning (Interested Parties) Regulations 2010 (as amended) and 'interested party' under s102(1) of the Planning Act 2008 (as amended).

1.3 We recommend the following amendments to the provisional draft Development Consent Order, document 3.01 as submitted within the application:

Page 5, definition of Environmental Statement shall be amended to include "means the environmental statement together with appendices and figures submitted with the application for this Order and certified as the environmental statement by the

Secretary of State”.

Page 7, 4-(1) to be amended to “Where an application is made to or request is made of the relevant planning authority, Natural Resources Wales, a highway authority a street authority or the owner of a watercourse, sewer or drain for any consent, agreement or approval required or contemplated by any of the provisions of this Order such consent, agreement or approval must, if given, be given in writing and is not to be unreasonably withheld or delayed.”

Page 7, “Power to deviate” to be amended to:

6 (2) Deviation under paragraph (1) is not permitted if it is unlikely to give rise to any materially new or materially different environmental effects from those assessed in the environmental statement.

(3) Deviation shall not be permitted if not within the terms of any relevant Plan identified in Requirement 6 forming part of the CoCP.

Page 12, Discharge of water 17.—(1) to be amended to include requirement 20, as follows “Subject to requirements 6 (CoCP), 8 (water management plan), and 20 (Excess Water Management Strategy),....”

Page 19 Operational land for purposes of the 1990 Act to be amended with following text: 30. Development consent granted by this Order shall be treated as specific planning permission for the purposes of section 264(3) of the 1990 Act (cases in which land is to be treated as operational land for the purposes of that Act) save that this Order shall not be treated (or have such effect) for the purpose of section 9(4)(d) Forestry Act 1967 (cases in which no licence is required) nor so treated (or have such effect).

Page 25, insert reference to the Environmental Statement and plans, statement at “Certification of plans etc. 39.—(1) The undertaker shall, as soon as practicable after the making of this Order, submit to the Secretary of State copies of—

- (a) the book of reference;
- (b) the land plans;
- (c) access plan;
- (d) the works plans;
- (e) the indicative engineering drawings; and
- (f) the Environmental Statement
- (g) any other plans or documents referred to in this Order, for certification that they are true copies of the documents referred to in this Order.

(2) A plan, management plan, statement or document so certified shall be admissible in any proceedings as evidence of the authorised development part of the contents of the document of which it is a copy.”

Page 28, Part 2, Requirements Definition COCP should refer to requirement 6 rather than requirement 5, as detailed.

Page 31, Requirement 6 (1) Code of Construction Practice to be amended to 6.—(1) No development of the site shall commence until a CoCP has been submitted to and approved in writing by the relevant planning authority subject to consultation in writing with Natural Resources Wales as required under this Part.

Requirements 13(1), 17(1) 19(2), 20(1), 23(3) shall be amended to ensure that the Local Planning Authority includes consultation with Natural Resources Wales prior to approving the relevant plans associated with these requirements.

Requirements 21 and 22 should be removed as these are duplicate of requirements 17, and 18.

Please contact Gareth Thomas, glyn.rhonwy@cyfoethnaturiolcymru.gov.uk or telephone 03000 65 3786 for further

advice/clarification regarding the above. We are happy to deal with any further issues arising in writing (or attend future hearings, if considered necessary).

Snowdonia Pumped Hydro's Response

The Applicant has made the requested changes to the definition of Environmental Statement and to Article 4(1).

The Applicant considers that the proposed change to Article 6(2) would change the sense of the Article in such a way that it would run counter to the intention of the section, to provide that "Deviation is not permitted if it is unlikely to give rise to any materially new or materially different environmental effects" would mean that deviation is only permitted if materially new or different effects are likely. The Applicant considers that the current wording better secures the intention and the introduction of "not" without amending "unlikely" to "likely" is an error. The Applicant has retained the current wording.

The Applicant notes that the CoCP is intended to be living document which is reviewed and amended as appropriate throughout the development to respond to any changes. Requirement 23 specifically allows for amended plans to be substituted. The change proposed to Article 6 does not add any useful control as the relevant CoCP plans would have to be updated to match any deviation which affected their terms. Those amended terms would have to be approved by the relevant planning authority.

The change requested to Article 17 has already been made in response to the first relevant representation.

Article 30. Section 9(4)(d) of the Forestry Act 1967 provides that the requirement of a licence for felling does not apply to any felling which is immediately required for the purpose of carrying out development authorised by planning permission granted or deemed to be granted under the Town and Country Planning Act 1990. This is the normal legal position and NRW have not explained why they consider it to be inappropriate in this case. Articles 31 and 32 give a power to remove trees, to require a felling licence runs directly counter to this power and the Applicant does not accept that it is necessary or expedient to deviate

from the standard legal position. The Applicant has accordingly not made the requested change.

Article 39. The Applicant considers that given the definition of Environmental Statement this was clearly covered any other plans or documents within article 39 however Environmental Statement has been added into list as a separate item as requested. The words “management plan, statement” have been inserted into Article 39(2).

The requested change to the definition of CoCP has been made.

Requirements.

Requirement 13 – land discovery strategy already contains an obligation to consult NRW at 13(8). Accordingly no change has been made

Requirement 17 - Construction compound and temporary structures. The Applicant is unclear why NRW have sought a specific amendment to this requirement given that all of the elements which can be approved under it are temporary however the Applicant has no objection to such an inclusion and has made the requested change.

Requirement 19(2) – external lighting scheme. The Applicant has made the requested change

Requirement 20 (1) Excess water management strategy. The Applicant is currently in discussion with NRW on a substantial change to the wording of this Requirement and has made no change at this time pending that revision. The changes currently under discussion will be included in the revision of the DCO submitted at Deadline 3.

Requirement 23(3) decommissioning plan is now Requirement 22(3) in the current draft DCO and already contains an obligation to consult NRW. Accordingly no change has been made.

The duplicate requirements have already been removed and no further change is necessary at this time.

5 SP Manweb

Response Received

These comments are made by SP Manweb which is the licenced Distribution Network Operator (the DNO) for the Manweb (Merseyside, Cheshire, North Shropshire and North Wales area, within which the proposed development is located. SP Manweb is a statutory consultee in DCO applications.

Reference has been made to the Applicant's Grid Connection Statement, in particular paragraphs 4.3 to 4.5 and 5.2. In relation to paragraphs 4.3 and 4.4, to clarify where reference is made to the POC offer, SP Manweb would only be responsible for providing new network from the POC. Likewise, in paragraph 4.4, under the POC offer, it is not the case of an either/or in terms of who would be appointed to complete the Grid Connection and SP Manweb consider it should read:

4.4 SPH have accepted the Point of Connection offer and are currently evaluating options to undertake the work. Following this process, an ICP will be appointed to complete the Grid Connection. They will have responsibility for:

- Finalising the route
- Undertaking the detailed engineering for the connection
- Undertaking any surveys or ground investigation work
- Installation and commissioning the equipment at the Development's Substation

- Installing the underground cable
- Jointing the cable at the Connection Point

Reference in paragraph 5.2 to it being possible to complete the works under SP Manweb's permitted development rights, should also be clarified by noting that this might not be the case where SP Manweb is not involved in providing the connection to the POC. SP Manweb suggest this paragraph is further reviewed following discussions between the promoter and SP Manweb.

The above comments are made on the basis that the current connection agreement is a POC offer. The promoter does have the option of varying or applying for a new connection offer in which case the above comments could change.

SP Manweb would welcome further discussions with the promoter in any aspect of the above.

Snowdonia Pumped Hydro's Response

The applicant accepted the Grid Connection Offer on 24th July 2015, and at the time of writing the Grid Connection Statement (Doc Ref: 7.01) it had yet to be determined on what basis the applicant would accept the offer i.e. full or point of connection.

The offer has subsequently been accepted on a Point of Connection (POC) basis.

The Applicant is now in the process of evaluating options for the connection to the Pentir substation and will in due course appoint an Independent Connection Provider (ICP) to design and undertake the works. Alongside this, the Applicant is liaising with Gwynedd Council regarding the consenting of the grid connection, and will also engage in continued dialogue with SP Manweb.

The Applicant is in continued discussion with SP Manweb and are seeking a Statement of Common Ground.

6 Lledr Hall Outdoor Education Centre

Response Received

As the manager of a local education authority run outdoor education Centre in North West Wales I have a vested interest in what happens at Llyn Padarn in Llanberis.

We regularly use Llyn Padarn to introduce young people to the sport of canoeing. We visit the lake sometimes 5 days of the week but often 3 days a week and stay there for the whole day. Over a calendar year we will take approximately 900 young people to this venue.

We use canoeing to teach a wide range of life skills to school pupils aged from 9 - 16 years of age. We drive to the car park, by the area known locally as the lagoons, in our minibus towing a canoe trailer. Llyn Padarn is a very special site that has unique advantages for this kind of work due to the extremely sheltered nature of the lagoons. Inevitably with this sort of activity children end up at times swimming in the lake so the quality of the water is extremely important to our organisation. There is no alternative site in the region that offers this type of environment which means that if it is lost or altered in any significant way we will be deprived of a unique teaching environment.

The proposed development of the site by Snowdonia Pumped Hydro has the potential to cause all sorts of problems both short and long term to our use of this fantastic resource. I believe these repercussions should be clearly explained to the Planning

Inspectorate during their deliberations

Snowdonia Pumped Hydro's Response

The Applicant has undertaken an assessment on water quality and water resources, which included an assessment of the potential effects of the Development on Llyn Padarn and compliance with the Water Framework Directive.

In order to facilitate construction, the quarries need to be dewatered. The Applicant has submitted a discharge consent application for this to be undertaken and is awaiting determination by NRW. A series of water and sediment samples have been undertaken in both Q1 and Q6, and no exceedance or contamination has been identified. Multiple attempts have been made to gain a sediment sample in both quarries but no discernible samples could be obtained due to the lack of sediment on the floor of the quarries. The floor of both quarries contains slate waste and boulders. If granted, the discharge of the water from these quarries would be controlled through strict conditions of these consents, which are likely to include monitoring, ongoing sampling and allowances on daily discharge volumes, rate and frequency.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions with utility companies are ongoing) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase may be reduced, however this will be kept to an absolute minimum.

The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance. The Environmental Liaison officer will be responsible for notifying all interested parties and local community of when such works will be undertaken, especially those in Llyn Padarn. When works in Llyn Padarn commence, there will be a temporary exclusion zone to avoid any impacts to recreational users and this is for safety. A Water Management Plan, as required by DCO Requirement 6, needs to be approved by Gwynedd Council prior to construction commencing on the overall Development and this will outline the mitigation measures, which will be implemented to ensure that water quality is not affected. The outlet of the spillway infrastructure itself will be placed at least 5m below the water level to avoid any potential effects to recreational users but also to avoid adverse effects to Arctic Charr. A marker buoy will identify the presence of the end of this pipe for navigational purposes.

In order to fill or “charge” the Development, water will be abstracted from Llyn Padarn, and approximately 1,300,000m³ is needed, an increase from the original 1,100,000m³ as per the approved abstraction license granted by NRW. A variation has been submitted for the additional 200,000m³ and the rate of abstraction will be strictly controlled, including rate, duration and frequency of abstraction including a “hands off” flow when there is limited or low flow into the catchment, specifically Llyn Padarn. The Development will not be able to abstract under these low flow conditions and will have to comply with the conditions of this abstraction license.

Once charged, the Development will be operated as a closed system, meaning that water is transferred between the two reservoirs only, and it is this transfer which will be used for the generation of electricity. There will be no need for any continual abstraction from, or discharge to, Llyn Padarn when the Development is in operation.

Due to the differences in meteorological conditions, namely the rate of precipitation or evaporation, there may be the need for abstractions or discharges to be made to either make up lost water from evaporation or discharge excess water within the closed

system. These abstractions and discharges are expected to be infrequent and will also be controlled through discharges consents (as required and controlled through the Environmental Permitting Regulations 2010) and abstraction license. In addition, there is also an Excess Water Management Strategy which is required by DCO Requirement 20, and must be approved by Gwynedd Council in consultation with NRW prior to operation. The Applicant does not expect these abstractions or discharges to be a significant volume and definitely not to the extent of the original abstraction.

There will be no requirement for any operational lighting or fencing, and the underground pumping station will be acoustically attenuated to minimise any potential noise generated when the pump is in use. After construction has been completed, and initial abstraction from Llyn Padarn is complete, the pumping station will only be further used to top up the system due to evaporative losses.

7 Blur Peris Mountain Centre

Response Received

We are primarily concerned about the disruption to the area known as the lagoons and the water area surrounding this venue. Outdoor recreation users frequent this area on a large basis, as well as children and adults visiting local outdoor education centers. Also the possibility of entrapment/snagging in the area in which the abstraction of water will take place by swimmers, canoeists etc. There is also concern with the possible pollution to the lake environment from the dumping of access water and the associated temperature differential from the normal value found in the lake (algal blooms) and also any sedimentary material being transported from the quarry area.

Snowdonia Pumped Hydro's Response

The Applicant has undertaken an assessment on water quality and water resources, which included an assessment of the potential effects of the Development on Llyn Padarn and compliance with the Water Framework Directive.

In order to facilitate construction, the quarries need to be dewatered. The Applicant has submitted a discharge consent application for this to be undertaken and is awaiting determination by NRW. A series of water and sediment samples have been undertaken in both Q1 and Q6, and no exceedences or contamination has been identified. Multiple attempts have been made to gain a sediment sample in both quarries but no discernible samples could be obtained due to the lack of sediment on the floor of the

quarries. The floor of both quarries contains slate waste and boulders. If granted, the discharge of the water from these quarries would be controlled through strict conditions of these consents, which are likely to include monitoring, ongoing sampling and allowances on daily discharge volumes, rate and frequency.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions with utility companies are ongoing) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate.

The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance. The Environmental Liaison officer will be responsible for notifying all interested parties and local community of when such works will be undertaken, especially those in Llyn Padarn. When works in Llyn Padarn commence, there will be a temporary exclusion zone to avoid any impacts to recreational users and this is for safety. A Water Management Plan, as required by DCO Requirement 6, needs to be approved by Gwynedd Council prior to construction commencing on the overall Development and this will outline the mitigation measures which will be implemented to ensure that water quality is not affected. The outlet of the spillway infrastructure itself will be placed at least 5m below the water level to avoid any potential effects to recreational users but also to avoid adverse effects to Arctic Charr. A marker buoy will identify the presence of the end of this pipe for navigational purposes.

In order to fill or “charge” the Development, water will be abstracted from Llyn Padarn, and approximately 1,300,000m³ is needed, an increase from the original 1,100,000m³ as per the approved abstraction license granted by NRW. A variation has been

submitted for the additional 200,000m³ and the rate of abstraction will be strictly controlled, including rate, duration and frequency of abstraction including a “hands off” flow when there is limited or low flow into the catchment, specifically Llyn Padarn. The Development will not be able to abstract under these low flow conditions and will have to comply with the conditions of this abstraction license.

Once charged, the Development will be operated as a closed system, meaning that water is transferred between the two reservoirs only, and it is this transfer which will be used for the generation of electricity. There will be no need for any continual abstraction from, or discharge to, Llyn Padarn when the Development is in operation.

Due to the differences in meteorological conditions, namely the rate of precipitation or evaporation, there may be the need for abstractions or discharges to be made to either make up lost water from evaporation or discharge excess water within the closed system. These abstractions and discharges are expected to be infrequent and will also be controlled through discharges consents (as required and controlled through the Environmental Permitting Regulations 2010) and abstraction license. In addition, there is also an Excess Water Management Strategy which is required by DCO Requirement 20, and must be approved by Gwynedd Council, in consultation with NRW, prior to operation. The Applicant does not expect these abstractions or discharges to be a significant volume and definitely not to the extent of the original abstraction. The WFD assessment and Habitats Regulation Assessment (HRA) also considers the potential effects of any temperature changes in the operational discharges and the potential effects on aquatic ecology. As normal operational discharges will be taken from the spillway at the near surface and so the water would be at surface temperature. Nonetheless the temperature will be strictly monitored through the discharge consent required for these infrequent discharges in to Llyn Padarn. NRW are in the process of determining these consents and have accepted the no significant effects conclusions of the WFD and HRA reports.

There will be no requirement for any operational lighting or fencing, and the underground pumping station will be acoustically attenuated to minimise any potential noise generated when the pump is in use.

8 Plas Gwynant OEC

Response Received

Main points of concern:

Visual impact of connection to grid. There is a recognition that the intention is to connect through underground cables however it is noted that the offer from SP Manweb is a proposed one and that it is un-finalised. The concern is that there is no definitive assurance and overarching 'holding to account' of SP Manweb should they decide, once the development is underway or nearing completion, that the connection is to be made above ground with associated visual impact to the area. This is a particular concern due to the fact that SPH consider the matter to be outside their proposal and therefore not their concern.

Disturbance to lagoons during construction phase. In particular impact on the resource in regard to term time use by outdoor providers. ES states that there will be a reduction in construction during key school holidays. However, the majority of outdoor providers, particularly the centres, operate during school term time periods with school groups.

Snowdonia Pumped Hydro's Response

The Applicant has accepted a Connection Offer from SP Manweb and are now evaluating options for the connection to the Pentir substation.

Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales

'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in Chapter 17 of the ES.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions are ongoing with utility companies) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance. The Environmental Liaison officer will be responsible for notifying all interested parties and local community of when such works will be undertaken, especially those in Llyn Padarn. When works in Llyn Padarn commence, there will be a temporary exclusion zone to avoid any impacts to recreational users and this is for safety. A Water Management Plan, as required by DCO Requirement 6, needs to be approved by NRW prior to construction commencing on the overall Development and this will outline the mitigation measures which will be implemented to ensure that water quality is not affected. The outlet of the spillway infrastructure itself will be placed at least 5m below the water level to avoid any potential effects to recreational users but also to avoid adverse effects to arctic char. A marker buoy will mark the presence of the end of this pipe for navigational purposes.

9 Daniel Jackson

Response Received

My greatest worry as a local resident is the visual impact of connection to grid. There is a stated recognition that the intention is to connect to the grid through underground cables. However, I note that the offer from SP Manweb is a proposed one and that it is un-finalised. The concern is that there is no definitive assurance and therefore my worry is that there is no-one to hold Manweb to account should they decide, once the development is underway or nearing completion, that the connection is to be made above ground with associated visual impact to the area. This is a particular concern due to the fact that SPH consider the matter to be outside their proposal and therefore not their concern.

Snowdonia Pumped Hydro's Response

The Applicant has accepted a Connection Offer from SP Manweb and is now evaluating options for the connection to the Pentir substation.

Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales 'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in Chapter 17 of the ES.

10 Gwynedd Council

Response Received

Trwy gofrestru diddordeb yn y cais hwn, dymuna Cyngor Gwynedd gael y cyfle i gyflwyno barn ar yr ystyriaethau perthnasol oddimewn y wybodaeth a gyflwynir yn y Datganiad Amgylcheddol gan gynnwys cymeryd rhan yn y trafodaethau a gynhelir ynglyn ag unrhyw amodau neu fesurau lliniaru perthnasol.

Cynhelir trafodaeth ynglyn a'r cais gan gabinet y Cyngor yn ystod mis Ionawr 2016, ag er na ellir rhagdybio beth fydd canlyniad y cyfarfod yma, ystyrir y bydd y canlynol yn debygol o fod yn berthnasol:

- cydymffurfiaeth gyda pholisiau cynllunio
- cyfnod adeiladu
- effaith gweledol/tirlun
- hawliau tramwy
- trafnidiaeth
- cyswllt grid
- ardrawiad cymdeithasol ag economaidd

- treftadaeth diwylliannol/hanesyddol

- swm a dirgryniad

- bioamrywiaeth

- hydroleg, hydroddaeareg, daeareg

- risg llifogydd

- llygredd

- effaith ar ardaloedd wedi eu gwrrachod

Mae'n debygol y bydd y Cyngor yn cyflwyno barn gyffredinol am y bwriad gan ategu fod datblygiad ar gyfer bwriad i greu cynllun 49.9MW eisioes wedi ei ystyried a'i ganiatau o dan y Ddeddf Cynllunio Gwlad a Thref gan Gyngor Gwynedd. Fe all ystyriaethau ychwanegol i'r uchod gael eu ategu o ganlyniad i gyfarfod y Cabinet ag yn ystod y cyfnod archwilio.

Mae Cyngor Gwynedd yn ystyried effaith y datblygiad arfaethedig ar sail y wybodaeth a gyflwynwyd ag fe gyhoeddir ganlyniadau'r ystyriaethau hyn yn yr Adroddiad Effaith Lleol (LIR) ag mewn unrhyw sylwadau a gyflwynir yn ystod y cyfnod archwilio

Snowdonia Pumped Hydro's Response

The Applicant is in frequent communication with Gwynedd Council. The applicant awaits further clarification from Gwynedd Council as to the main points of concern with regard to the topics listed.

11 Patrick Gunning

Response Received

The following is a summary outline of the main issues that I intend to address in relation to the application: -

- Technical (Head & Energy Storage Potential)
- Capital Cost
- Environmental Sensitivity (Designations etc)
- Proximity to the Grid
- Site Access and Land Ownership

Snowdonia Pumped Hydro's Response

The Applicant notes the relevant representation and will await further details to enable a fuller response to be possible in relation to the issues raised.

12 Neale Lewis Jones

Response Received

My major concerns are regarding the potential for the contamination of Llyn Padarn through the disturbance of the waters contained in the quarries, previously utilised for the storage of chemical and conventional weapons and referred to in the survey document entitled 'Glyn Rhonwy Pumped Storage Development Consent Order Appendix 8.5 Zetica (2015) UXO Desk Study Report'.

There is massive potential for contamination of the water through natural seepage. The report highlights the following and quotes recently released documents from the Ministry of Defence documentation.

I quote from same:.....

- 1) 'it was temporarily used as a storage facility for 14,000 tons of bombs filled with Tabun, a toxic nerve gas which had been seized from German ammunitions dumps..'
- 2) 'Records indicate that this disposal was not always successful...'
- 3) 'Disposal activities at RAF Llanberis are considered to provide a source of UXO hazard within the quarry pits on the site'
- 4) The details of pit locations are marked incorrectly on the photographs giving extreme concern should we agree with the location of ammunition on site at the present time

5) 'It should be noted that the RAF was unwilling to certify the quarries completely free of explosives despite rendering safe each disposal area.

6) In 2015 'During recent Site walkovers, the Client has encountered potential items of UXO..... These discoveries indicate that, despite the extensive EOD operation, not all items of ordnance within the quarry pits were accounted for'.

Biggest concern....'the decomposition products of these materials, especially Mercury and Lead can be highly toxic'.

These are just a few of many major concerns that if not addressed, surveyed, risk assessed and indeed monitored may have a catastrophic affect on the lives and health of residents, workers and indeed the wildlife and water contained in LLyn Padarn.

How can the developers possibly ensure that the site and its contents will not :

1) Explode

2) Permit contaminated water potentially containing Mercury (fatal if swallowed bearing in mind the amount of swimmers using the lake) and Lead, from naturally making its way through underground faults once it is disturbed.

I cannot find any reference in the documentation as to how the developers plan to deal with UXO should it be encountered.

Hve the developers budgeted for the cost of the disposal of any UXO, surely the cost would be prohibitive?

With the potential for such eventualities, surely the process should be considered at the highest level, given the extraordinary site circumstances involving the storage of chemical and conventional weapons.

Surely, the document I have referred to gives rise to many, many questions that need thorough investigation to ensure public safety and environmental sustainability.

Submitted for consideration:

Snowdonia Pumped Hydro's Response

The Applicant commissioned Zetica to prepare detailed information to support the DCO application and the purpose of the two Zetica Reports (UXO Desk Study Report, 2015 and UXO Desk Study report for Cefn Du, 2015) contained within Appendix 8.4 and 8.5 of the ES are to provide an overview of the potential for UXO within the Development Order Limits. It has been identified that UXO may be present within the lower quarry Q6 as a result of its historic use. Requirement 7 of the DCO requires production and approval of an Ordnance Management Strategy (as part of the CoCP) prior to commencement of development to manage the potential for UXO and its safe remediation (if found). Requirement 7 also requires a Land Discovery Strategy to be produced and approved prior to commencement of construction to manage the potential for contamination of land and groundwater that could pose a risk to public health including its remediation if found. The Applicant wishes to state that the health and safety of not just the local community but the construction workforce is of utmost priority and paramount importance. These measures will be put into place to ensure that any UXO which is identified is disposed of in a responsible manner as will be required by the Ordnance Management Strategy.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present. The floor of both quarries contains slate waste and boulders.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

DCO Requirement 7 requires an Ordnance Management Strategy to be prepared and agreed with the Gwynedd Council prior to construction commencing. This will detail the methods for identifying, managing and disposing of any UXO which is found within the Development Order Limits. Consent for appropriate facilities to dispose of UXO on site has been included with the works set out in the DCO.

The management of UXO has been accounted for within the overall construction budget.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the Explosive Ordnance Disposal (EOD) operation in the 1970s. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

The following sections provided responses in the same notation as the Relevant Representation:

- 1) The 14,000 tonnes of bombs cited in the relevant representation, relates to the total number that passed through the site during its lifetime (between 1946 and 1947). At no point was the site used to conventionally 'store' chemical weapons. Instead Glyn Rhonwy acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.
- 2) This relates to the UXO disposal on the site (i.e. conventional UXO such as High Explosive and Incendiary items and not chemical weapons). Despite what might be commonly understood by the public, causing UXO to detonate can be very difficult and, as such, some failures in an UXO disposal operation are to be expected. Any remnants of such failures would either have been dealt with at the time, or would be dealt with as part of any future clearance works.
- 3) During the clearance of the site by the RAF in the 1970s, the RAF made a decision that where UXO items contained <math><0.5\%</math> live UXO, then clearance activities were to be halted. As such, whilst the quantity of live UXO is likely to be very low, the likelihood of some live UXO remaining on the site is considered to be high.
- 4) Whilst the quarry pits have been referred to by different names historically and not always consistently, the documentary evidence (including annotated site plans) is clear about what took place at each pit and there is consequently a detailed understanding of the anticipated hazards within each quarry at the site.
- 5) See response to '3)' above.
- 6) See response to '3)' above, but also whilst rusting and oxidation of UXO does not generally make it more hazardous, it does

make it more difficult to determine whether it is live or not. As such, all such UXO would be treated as live and dealt with accordingly. Also note the removal of UXO (and any other scrap within the quarries) as part of this development removes the source of such contamination.

In response to the second list of queries within the relevant representation, the Applicant wishes to respond as follows:]

1) A specialised contractor will be used for the identification, removal and remediation of any UXO found. Such a specialist contractor utilises standard industry practices and would be used to dealing with undertaking Explosive Ordnance Disposal, relying on decades of experience and well documented approaches provided by organisations such as the MoD. The primary aim of any such operations is to ensure that any potential prospect for an unexpected detonation is considered and properly mitigated.

2) See responses above regarding the application for dewatering discharge consents, which are currently being determined by NRW

Any Ordnance Management Strategy is required to be prepared and agreed with Gwynedd Council prior to any works commencing. It is required to be a live document, and can be updated and amended as required. It will set out the phased manner on how UXO will be dealt with as identified, ensuring the development goes ahead safely. Typically these phases comprise:-

- Detailed UXO hazard identification – Confirming the type, nature, condition, location and likely hazard from the anticipated UXO.
- UXO detection – Where appropriate, the location of UXO is confirmed through visual/detection techniques.
- Explosive Ordnance Clearance – Any UXO related items are investigated and items classified as hazardous, non-hazardous or non-UXO.
- Explosive Ordnance Disposal – Any hazardous UXO is made safe.

Any UXO deemed hazardous will be made safe through a controlled explosion. Such operations are undertaken routinely by

specialist contractors, typically with the public unaware as modern and commercial approaches are designed to have no real impact on the local community. Such costs are routinely applied to many sites across the UK as part of a routine approach to development in the UK. Glyn Rhonwy has the ability to provide natural attenuation as the UXO are expected to be at the base of the Q6.

13 Arfon Swimming Club

Response Received

I'd like to register as an interested party in regard to the Glyn Rhonwy Development as the Chair of Arfon Swimming Club. The Club has around 60 members and, as Chair, I am expressing our concerns particularly to the impact of the development of the Lagoons area of Llyn Padarn and the potential harm to water quality following the planned discharge into Llyn Padarn.

During the months of April to October, many Members use the Lagoons area and Llyn Padarn at least twice per week for open water swimming and social activities (BBQs etc).

We are concerned with the location of pumping station for water abstraction particularly

1. disruption to access during construction
2. damage to trees along the shoreline
3. impact on the amenity (which is heavily used by many locals) in terms of noise and light pollution.

We would also like to make representation about the permanent loss of the Llyn Padarn amenity due to water pollution following the planned discharge from the development.

Glyn Rhonwy quarries were used to store 14,000 tons of bombs filled with tabun (a toxic nerve gas). Surplus and faulty ordnance was also disposed of in the quarries.

The site survey document by Zetica (“SITESAFE UXO DESK STUDY” - extracts quoted below) highlights a number of extremely worrying points including (and not restricted to):

1. “Records indicate that this disposal was not always successful. Firstly ordnance would often get lodged on rock shelves, in slate piles or within crevices when tipped into the quarry, never making it into the burning pit”.
2. “Given the volume of ordnance that required clearance, and the working practices of the period, it is possible that some explosive items were inadvertently disposed of in Pit2B and residues may have remained within some of the casings”

In relation to encountering live ordnance during clearing processes...

3. “This means that there are still live ordnance items within the remained of the [slate] pile, constituting a significant source of UXO hazard.”

In relation to the 1972 clearing process:

4. “During clearance of the slag heap it was discovered that the previous disposal process had been inefficient and was incomplete, with live and semi-destroyed material still in place. Unburnt magnesium powder was interspersed with live detonators and other explosives.”
5. “It should be noted that the RAF was unwilling to certify the quarries completely free of explosives, despite rendering safe each disposal area.”
6. “During recent Site walkovers [in 2015] , the Client has encountered potential items of UXO on the access path to Pit 2A.....These discoveries indicate that, despite the extensive EOD operation undertaken, not all items of ordnance within the quarry pits were accounted for.”

These points (and many others in the document) indicate, at the very least, a considerable risk of contamination of any water

discharged from the development into Llyn Padarn.

Snowdonia Pumped Hydro's Response

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions are ongoing with utility companies) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance. Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure.

Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties including recreational bodies, are kept informed of timings, location and duration of disruption.

The design of the pumping station has been in full consultation with NRW which includes placing the outlet above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will mark the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway

will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

Trees will have to be removed in the immediate working area of the spillway infrastructure to facilitate access and placement of the spillway infrastructure. A tree survey will be undertaken prior to construction and any trees removed will be mitigated as per DCO Requirement 12 as part of the Habitat Management Plan (HMP). The spillway infrastructure will be micro sited to avoid any trees of note or root protection areas where trees can be retained.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level - the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents which are currently being determined by NRW.

The ES provided the following documents: Appendix 8.4 MOD Letter, Appendix 8.5 Zetica UXO Desk Study Report and Appendix 8.6 Zetica Report (Cefn Du). ES Chapter 8 outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 6 and 13 will be implemented.

Due to the specialist nature of UXO, additional comments from ZeticaUXO have been included. These are as follows:

There is no evidence to suggest that anything other than conventional UXO was disposed of in the quarries, not Tabun.

1. This relates to the UXO disposal on the site (i.e. conventional UXO such as High Explosive and Incendiary items and not chemical weapons). Despite what might be commonly understood by the public, causing UXO to detonate can be very difficult and, as such, some failures in an UXO disposal operation are to be expected. Any remnants of such failures would either have been dealt with at the time, or would be dealt with as part of any future clearance works.
2. Yes, and as such this is being addressed as part of any future works that may impact on the area.
- 3) During the clearance of the site by the RAF in the 1970s, the RAF made a decision that where UXO items contained <0.5% live UXO, then clearance activities were to be halted. As such, whilst the quantity of live UXO is likely to be very low, the likelihood of some live UXO remaining on the site is considered to be high. It is for this reasons that a proactive approach to UXO is being implemented.
- 4) Again as above, it is for this reason that a proactive approach will be employed.
- 5) Quarries were not totally cleared, see above.
- 6) See above.

14 Ramblers

Response Received

Wherever there is an affected Public Right of Way this ROW must be protected in accordance with all legal requirements. Should there be a temporary closure of a PROW during construction application must be made for a Temporary Prohibition of Use Order. A notice of any temporary closure or diversion must be clearly displayed. Our Public Rights of Way must be protected at all costs, and this is particularly of the utmost importance in the National Park. Safety in all aspects must be considered before any construction in the area of the PROW must receive the utmost consideration for the protection of the many visitors to the area using these footpaths

Snowdonia Pumped Hydro's Response

To ensure safety of the recreational users during the construction and decommissioning works, temporary closures and diversions of PROWs and permissive routes will be implemented. The Applicant has included provision within the DCO for both temporary and permanent closures and diversions of PROW (which are set out in Schedules 2, 3 and 4 and shown on the Access plan). Article 13(5) provides that a replacement or diverted route must be in place and available for use before any restriction or prohibition on the existing comes into force.

The Environmental Liaison Officer will be responsible for notifying all interested parties (including recreational bodies) and local

community of when such works will be undertaken, especially PRowS and permissive routes which are used recreationally for organised walks or competitions. This will include any temporary closures of routes or diversions due to construction activities such as blasting or drilling when the consideration of safety is paramount.

DCO Requirement 7 required the Applicant to prepare and submit a Health and Safety Plan which will include fencing details, details of all diversions and appropriate signage.

It should also be noted that the Order Limits do not encroach on the National Park and the ES has outlined that there is no adverse impacts to the National Park from landscape and visual effects or from access.

15 Lynne Pugh

Response Received

I have concerns about the possible damage to the lake and shore during the construction period and after. This is a beautiful lake and surrounding area which is used by many walkers, boat users and swimmers. It is a great asset to the local town and if there was any toxic discharge into the lake could destroy a beautiful lake and loose all the revenue from tourists and locals who come to the are. I have concerns also about the possible destruction to the fish that are in the lake.

Snowdonia Pumped Hydro's Response

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions are ongoing with utility companies) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and

importance. Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure.

Aquatic surveys have also been undertaken and are presented in Appendix 7.19 of the ES. This included both quarries and also in Llyn Padarn where the proposed spillway infrastructure is located. No fish species were identified in Q1 and only very limited species of fish were identified in Q6 (one eel and a few sticklebacks). The Applicant has been in consultation with NRW regarding the breeding seasons and locations of the Arctic Charr and this has been considered with the Environmental Statement and Habitats Regulation Assessment.

The design of the pumping station has been in full consultation with NRW, which includes placing the outlet above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will identify the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties including recreational bodies, are kept informed of timings, location and duration of disruption.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as

possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents, which are currently being determined by NRW.

16 Tom Hutton

Response Received

I am a local resident and run a business based on tourism in the area (mountain biking and walking guiding).

I am worried about this development on a number of levels, the biggest being the impact it will have on the natural environment in the area. The hill of Cefn Du is much-loved by locals. It is riddled with tracks and trails that provides accessible breathing space for all kinds of people, unlike much of the national park, where the mountainous nature of the ground makes many areas inaccessible. The hill will be effectively out of bounds during the construction period and then less accessible afterwards.

The works will be a blot on the landscape, and will adversely affect access and enjoyment of people who climb nearby Moel Eilio – widely thought of as one of the best view points in Wales.

The traffic that will need to access the development will make life a misery for Waunfawr residents, in a village which has incredibly narrow roads. And the increased noise will affect all residents during construction and potentially afterwards too.

There are also rare, protected bird species nesting in the area including peregrine falcons and choughs, and I have always thought that there was a duty to protect the known breeding sites of these birds?

Lower down, in Llanberis, there is potential that a local beauty spot will be spoiled forever, with a huge risk of pollution from ammunition stored in the area.

This would have a catastrophic effect on the local people and the economy. Llyn Padarn is used by people of all ages, both locals and visitors, for swimming, boating of various types and just for socialising in the summer. This is like a beach for Llanberis and vital to the economy.

This could be out of bounds during construction, potentially adversely affecting tourism. And could potentially be lost for good if there is a pollution problem caused by the munition store.

And last but not least, I am suspicious of the ability of the developer to carry out the work in line with its own policies or the planning permission it receives. It seems slightly disingenuous to apply to our local council for permission for a small scheme, one so small in fact that most locals felt it would never be financially viable so didn't worry too much about, and then once approved, to suggest the capacity can be doubled to a size where it would be viable and one that locals would have spoken out against.

The work carried out so far has flown in the face of the company's own environmental policies, including drilling work outside the dates agreed to protect nesting birds and closing off public rights of way without permission. If they have been incapable of sticking to the letter of their own policies so far, what are they going to be like if and when real work starts?

This is a deprived area that relies on tourism, particularly outdoor tourism, for most of its income. There are many ways that this scheme could damage the local environment and the tourism that depends upon it. And if it did so, it would have a huge economic impact that would far outweigh any jobs created by it, either in construction or long term.

I personally would urge you to consider this too big a risk and to refuse permission for the scheme.

Snowdonia Pumped Hydro's Response

To ensure safety of the recreational users during the construction and decommissioning works, temporary closures and diversions of PRowS and permissive routes will be implemented. The Applicant has included provision within the DCO for both temporary and

permanent closures and diversions of PRow (which are set out Schedules 2, 3 and 4 and shown on the Access plan). Article 13(5) provides that a replacement or diverted route must be in place and available for use before any restriction or prohibition on the existing comes into force.

The Environmental Liaison officer will be responsible for notifying all interested parties (including recreational bodies) and local community of when such works will be undertaken, especially PRowS and permissive routes which are used recreationally for organised walks or competitions. This will include any temporary closures of routes or diversions due to construction activities such as blasting or drilling when the consideration of safety is paramount.

With regards to Cefn Du, the construction area will be limited as much as possible to ensure access is still possible. The Order Limits do not incorporate the peak of Cefn Du. In addition a temporary replacement car park has been identified (as shown on ES Figure 4.1 Development Overview) and will be implemented as a like for like replacement during the construction phase at Q1. Once Q1 is operational, the car park will be reinstated at the base of the new reservoir dam.

The visual impacts of the construction have been assessed from all key viewpoints and are presented in Chapter 6 of the ES. The viewpoints are shown in ES Figure 6.3 with the operational Development shown in photomontages presented in ES Figure 6.4 a – l. Construction impacts are temporary in nature and not shown on the photomontages. Gwynedd Council, NRW and SNPA have no objection or further comments to the conclusion of these assessments.

A traffic assessment has been undertaken and is presented in Chapter 12 of the ES with the required mitigation summarised in Chapter 18 of the ES. The traffic assessment undertaken considers the impacts of construction and operational traffic which exits the A4085 and travels to Q1 through the village of Waunfawr and Groeslon. As part of the mitigation outlined in Chapter 12, the Applicant will prepare, submit and gain approval for a Construction Traffic Management Plan (as required by DCO Requirement 6

and 9) which will outline the traffic management which must be implemented through the construction phase. This will include restrictions on times of abnormal or large equipment and plant through the village, construction working hours, speed and safety measures to be implemented. This will be prepared and must be approved by Gwynedd Council prior to the commencement of construction. The dedicated Environmental Liaison officer will be the point of contact for all concerns and will also communicate traffic movements and the implementation of specific mitigation measures as appropriate.

The Applicant has also had due consideration of the highway improvements required to the access to Q1 via Ffordd Cefn Du. The swept path analysis was presented at consultation within the Preliminary Environmental Information (PEI) and outlines the areas of improvement required. This is mainly above the cattle grid where drainage repairs, resurfacing, creation of passing places and stabilisation works are required. The section below the cattle grid to the junction with the A4085 will require resurfacing and drainage repairs. No passing places are required south of the cattle grid and the works will remain within the highway and verge, with the road remaining as a single carriageway. These works will be undertaken to an agreed specification on behalf of Gwynedd Council under a Section 278 agreement..

An assessment of noise and vibration has been carried out and is presented in Chapter 13 of the ES. This includes noise from all potential sources including blasting and the conveyor used to transport material between Q6 to Q1. This conveyor is to be placed within the penstock which is located between 50m and 90m below ground level. There are no above ground conveyors, other than those which may transport material from inside the quarries to the construction compounds on excess slate mounds. The noise chapter outlines mitigation measures which are summarised in Chapter 18 Schedule of Mitigation. These mitigation measures during construction will be secured through the Construction Noise Management Plan (NMP) as required by Requirement 6. This NMP is part of the CoCP which is to be approved by Gwynedd Council in consultation with NRW (where appropriate) prior to the commencement of construction. In addition, the Environmental Liaison group will be used to keep the local community informed of

planned construction activities, timings and durations including blasting. They will also provide lines of communication where complaints can be dealt with. The Applicant has recognised that some nuisance effects may be felt on nearby receptors during construction and these are outlined in the Statement of Statutory Nuisance including the procedure for complaints.

Assessment of protected species and breeding birds is presented in Chapter 7 of the ES and mitigation is summarised in Chapter 18 of the ES. The Applicant will submit and gain approval to a Breeding Bird Management Plan as required by Requirement 6 of the DCO. The construction programme will consider sensitive seasons such as breeding birds and the intention is to avoid any blasting activities in such times, but if this may not be possible, then the Management Plan will be implemented.

It has been identified that UXO may be present within the lower quarry as a result of its historic use. ES Chapter 8 outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Management Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties including recreational bodies, are kept informed of timings, location and duration of disruption.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

Chapter 3 of the ES outlined the reasons for why this Development has been submitted for the increased capacity. All the previous

planning conditions, which were imposed on the T&CPA application, have been incorporated into the DCO Requirements. The DCO itself is a legal instrument which requires compliance and implementation of its legal obligations, and this is in addition to the other consents, licenses and operational approvals which will be complied with such as the Reservoirs Act and Environmental Permitting Regulations 2010.

17 Chloe Rafferty

Response Received

1. As a regular swimmer in Llyn Padarn I am concerned about the effects of the scheme on the lake and shores regarding both access in the Y Glyn (Lagoons) area and the effect on the quality of the water.
2. I have concerns about the overall effect to the environment of Llyn Padarn due to the potential leaking of dumped military waste in the proposed sites.
3. I am an organiser of an SwimRun event that takes place in Y Glyn in late June (www.loveswimrun.co.uk). As well as my points from 1. I am concerned that the building of the pump house will cause a loss of access to this area for swimming and running along the shores which will prevent this event from taking place. This is my business so I have a vested interest in the area and it's access through Padarn Country Park Authorities

Snowdonia Pumped Hydro's Response

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction

works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption. We would welcome further information from the respondent on the timings and location of this competition.

The design of the pumping station has been in full consultation with NRW which includes placing the outfall pipe above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will mark the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents which are currently being determined by NRW.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The

health and safety of the environment, local communities and the workforce is of paramount importance.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the Explosive Ordnance Disposal (EOD) operation in the 1970s. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

18 Cydeithas Eryri the Snowdonia Society

Response Received

The main areas of concern which we will address are:

1. Landscape and visual impacts of the development in its entirety
2. Sensitivity of upland landscape close to National Park boundary
3. Impacts on public access and enjoyment
4. Common land exchange
5. Impacts on ecology of freshwater, including designated sites and their qualifying features

Snowdonia Pumped Hydro's Response

The Applicant notes the comments of The Snowdonia Society and awaits further comments. However summary comments are provided below in the same notation as provided:

1. The visual impacts of the construction have been assessed from all key viewpoints and are presented in Chapter 6 of the ES. The viewpoints are shown ES Figure 6.3 with the operational Development shown in photomontages presented in ES Figure 6.4 a – l. Construction impacts are temporary in nature and not shown on the photomontages. Gwynedd Council, NRW and SNPA

have no objection or further comments to the conclusion of this assessment.

2. As per point 1.
3. Impacts on tourism, access and recreational have been assessed in Chapter 15 of the Environmental Statement
4. A Common Land Application is to be submitted to the Welsh Ministers and is outwith the determination of the DCO by the Secretary of State for Energy. However impacts regarding temporary and permanent diversions of PRoWs have been assessed within Chapter 15 of the ES.
5. Potential effects on ecology, protected species and designated sites are assessed in ES Chapters 6 Ecology and 9 Water Resources. These chapters are supplemented by the Habitats Regulation Assessment (Document 5.03 - No Significant Effects Report) and Water Framework Directive (ES Appendix 9.1). NRW have accepted the conclusions of these reports and assessment which demonstrate that subject to the mitigation measures outlined in ES Chapter 18 and secured through the DCO Requirements or separate consenting regime (such as a discharge consent or protected species license), that there will be no significant effects to these features.

19 Kent County Council

Response Received

This Scheme has potential for a negative impact on the long established educational recreational and leisure usage of Llyn Padarn and the area immediately adjacent to it, an outstanding Nationally Valued natural environment. This Negative impact has potential to adversely affect more widely existing commercial leisure and tourism providers in the region. It is not clear that the benefits claimed for the scheme justify or have been balanced against the irreversible losses that may result.

Snowdonia Pumped Hydro's Response

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption.

The design of the pumping station has been in full consultation with NRW which includes placing the outfall pipe above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will mark the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

Once complete the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be

required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

20 Ann Lawton

Response Received

I am extremely concerned regarding the potential for the contamination of Llyn Padarn through the disturbance of the waters contained in the quarries. Previously classified information has been released in the Developer's documentation about known and unknown ordnance remaining on site. Large volumes of water will be discharged from the quarries and could carry harmful chemicals. This could have a profound effect on downstream water catchment areas. Proposals for monitoring and controlling this discharge are inadequate. Public safety and environmental sustainability are paramount. Chemical and other weapons were stored in the quarries. (Reference: document entitled 'Glyn Rhonwy Pumped Storage Development Consent Order Appendix 8.5 Zetica (2015) UXO Desk Study Report').

There are many worrying quotes in the report, mainly:

* 'temporarily used as a storage facility for 14,000 tons of bombs filled with Tabun, a toxic nerve gas'

*'Records indicate that this disposal was not always successful...'

*'Disposal activities at RAF Llanberis are considered to provide a source of UXO hazard within the quarry pits on the site'

*I notice that pit locations are marked incorrectly on some photographs giving extreme concern should we agree with the location of ammunition on site at the present time

* the RAF was unwilling to certify the quarries completely free of explosives despite rendering safe each disposal area.

* In 2015 'During recent Site walkovers, the Client has encountered potential items of UXO. These discoveries indicate that, despite the extensive EOD operation, not all items of ordnance within the quarry pits were accounted for'.

*'the decomposition products of these materials, especially Mercury and Lead can be highly toxic'.

Should these points not be addressed, they could possibly lead to terrible effects on the lives and health of local people, workers and the wildlife and water contained in Llyn Padarn. The possible catastrophic effects could lead to losing 100s of jobs too.

I have written to the MOD who are yet to be able to state that the site and it's contents are safe. In view of this, how can the developers possibly ensure that the site and its contents are safe!!...and if anything was to happen, how would the developer deal with it?

This matter surely needs to be considered at the highest level, given the extraordinary site circumstances involving the storage of chemical and conventional weapons. Public safety and environmental sustainability are paramount

Snowdonia Pumped Hydro's Response

The ES provided the following documents: Appendix 8.4 MOD Letter, Appendix 8.5 Zetica UXO Desk Study Report and Appendix 8.6 Zetica Report (Cefn Du). ES Chapter 8 outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and

13 will be implemented.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

The quarries need to be dewatered prior to further investigation for unexploded ordnance. This dewatering activity will be undertaken as per the conditions and strict regulation of the discharge consent, which is currently being determined and will be issued and controlled by NRW.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and other relevant consultees will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past and current analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that

there was considerable disturbance of the quarry pits during the EOD operation in the 1970s, and also supplementary testing which has been undertaken by the Applicant. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

Using the bullet points within the Relevant Representative, the Applicant provides a response in the same order:

- The 14,000 tonnes of bombs cited above, relates to the total number that passed through the site during its lifetime (between 1946 and 1947). At no point was the site used to conventionally 'store' chemical weapons, Instead the site acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.
- This relates to the UXO disposal on the site (i.e. conventional UXO such as High Explosive and Incendiary items and not chemical weapons). Despite what might be commonly understood by the public, causing UXO to detonate can be very difficult and, as such, some failures in an UXO disposal operation are to be expected. Any remnants of such failures would either have been dealt with at the time, or would be dealt with as part of any future clearance works.
- During the clearance of the site by the RAF in the 1970s, the RAF made a decision that where UXO items contained <0.5% live UXO, then clearance activities were to be halted. As such, whilst the quantity of live UXO is likely to be very low, the likelihood of some live UXO remaining on the site is considered to be high.

- Whilst the quarry pits have been referred to by different names historically and not always consistently, the documentary evidence (including annotated site plans) is clear about what took place at each pit and there is consequently a detailed understanding of the anticipated hazards within each quarry at the site.
- See response to ‘bullet point 3’ above, but also whilst rusting and oxidation of UXO does not generally make it more hazardous, it does make it more difficult to determine whether it is live or not. As such, all such UXO would be treated as live and dealt with accordingly. Also note the removal of UXO (and any other scrap within the quarries) as part of this development removes the source of such contamination.

There is no evidence to suggest that the contents of the quarries provides for a potential catastrophic event. In line with any construction project, this development will be undertaken with a proactive approach towards hazards such as UXO. Ensuring safety during construction, all potential UXO impacting on the development will be removed and disposed of. Whilst the probability of detonation or the potential to contaminate water courses is low, the removal of any UXO is considered a prudent strategy ensuring safety and a cleaner environment than currently observed.

Development of a site having a UXO hazard is very routine in the UK, so much so that the MoD simply does not have the resource to assist and, as such, the policy in the UK is that if UXO can be reasonably foreseen by a developer, then the developer can put in place a mechanism to deal with the UXO. Specialist contractors with considerable experience in such developments and with the advantage of long-term planning, are able to implement far greater mitigation systems than that typically employed by the MoD. As part of the Ordnance Management strategy and related risk assessments, the potential hazards will be considered and appropriate safety precautions employed, along with contingency planning.

21 Dean Lawton

Response Received

My main concern is the potential damage to Public Health and Llanberis, particularly Llyn Padarn with the spill off from the quarries, knowing that chemical and other ordnance have been stored there. Previously classified information has now been released in the Developer's documentation about known and unknown ordnance remaining on site.

My other concerns are:

The Developer gives assurances that the connection to the national grid will be underground, but there is no legal obligation. Financial and technical considerations could result in pylons being used. There should be a legal obligation to make the connection underground

Llanberis area is very popular for outdoor recreation, including fishing and watersports for local people and visitors. Any degradation of the environment arising from this scheme, particularly water quality for swimming or fishing, could have a negative effect on this important part of the local economy

Snowdonia Pumped Hydro's Response

The ES provided the following documents: Appendix 8.4 MOD Letter, Appendix 8.5 Zetica UXO Desk Study Report and Appendix 8.6 Zetica Report (Cefn Du). Chapter 8 outlines the potential effects of unexploded ordnance from the construction of the

Development and Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

The quarries need to be dewatered prior to further investigation for unexploded ordnance. This dewatering activity will be undertaken as per the conditions and strict regulation of the discharge consent, which is currently being determined and will be issued and controlled by NRW.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and other relevant consultees will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

The Applicant has accepted a Connection Offer from SP Manweb and are now evaluating options for the connection to the Pentir substation.

Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales 'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in Chapter 17 of the ES.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions are ongoing with utility companies) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption. However the safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past and current analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the EOD operation in the 1970s and that undertaken by the Applicant. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

At no point was the site used to conventionally 'store' chemical weapons, Instead the site acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.

22 Emily Wood

Response Received

I am concerned with regard to the electrical connection to the national grid.

Chapter 3 states that the SPH (Snowdonia Pumped Hydro) expects the grid connection to be underground however has no direct control over the electrical connection as it is Associated Development and therefore can provide no assurance on the connection.

Chapter 17 Cumulative Impact Assessment considers the inter-related impacts from the grid connection and the Project but no visual assessment is undertaken as the electrical connection is assumed to be underground. This assessment is therefore invalid. The assessment of the worst case visual impact of the overground electrical connection with the Glyn Rhonwy development will be a major adverse significant impact throughout the project life on the visual amenity of the area.

I am concerned by the proposed location of the pumping station within the lagoons area of Llyn Padarn – in regard to:

- Safety to recreational users;
- Potential restriction on recreational use of the lagoons area;
- damage to the visual amenity of the area;
- damage to established trees on the Llyn Padarn shoreline; and

- loss of recreational amenity due to noise and light pollution.

Chapter 4 states it was agreed with National Resources Wales that the approved scheme would be of sufficient depth (5 m) that adverse effects to recreational users in Llyn Padarn would be avoided. The potential effects are not identified - what depth is actually considered safe and whether seasonal variation in water depth is considered.

Contaminated water has the potential to enter the lake from disturbance of the quarry housing old ammunitions containing TNT etc. Any contamination will pose a safety risk to recreational users.

Chapter 4 states the pumping station will be in a vegetated area by the car park. This area is not a car park but a grass picnic area with picnic tables, mature trees and enclosed shallow lagoons for safe sheltered swimming, and as advised by Country Council For Wales, February 2013, "The proposed pump house is to be built on the shores of Llyn Padarn, within the area locally known as the lagoons ... a very important recreational resource for local people and tourists".

There is no clear rationale for considering the location of the pumping station directly in the middle of the lagoons. The impacts from the pump station with regard to loss of trees, light pollution, noise, and disturbance during construction are all identified in the Draft ES and would be minimised by moving the location outside of this key area.

Chapter 12 states the pumps are not inherently noisy. What does this mean in way of background humming? The noise assessment is incorrect as does not consider the nearest NSR, recreational users, "directly adjacent" and high sensitivity.

Chapter 15 Socioeconomics advises that the location of the pumping station has been moved from the lagoon area and so has not been assessed. This is not the case as it remains one of only two options being presented. This assessment is therefore incorrect.

Snowdonia Pumped Hydro's Response

The Applicant has accepted a Connection Offer from SP Manweb and are now evaluating options for the connection to the Pentir substation.

Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales 'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in ES Chapter 17 of the ES.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption. However the safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station. Chapter 4 of the ES provides details on the dimensions and potential colour of the above ground control box.

The ES has considered the two potential locations for the pumping station, and subject to further discussions with utility companies and their requirements for protected provisions, the pumping station could be moved further back from the shoreline. Trees will have to be removed in the immediate working area of the spillway infrastructure to facilitate access and placement of the spillway infrastructure. A tree survey will be undertaken prior to construction and any trees removed will be mitigated as per DCO Requirement 12 as part of the Habitat Management Plan (HMP). The spillway infrastructure will be micro sited to avoid any trees of note or root protection areas where trees can be retained. Excessive ecological surveys have been undertaken for the last four years and the conclusions of these surveys and the assessment contained within the ES and Habitats Regulations Assessment has been accepted and approved by NRW. The mitigation required to be implemented to ensure no significant effects is summarised within ES Chapter 18 Schedule of Mitigation.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination. Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no

discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

The quarries need to be dewatered prior to further investigation for unexploded ordnance. This dewatering activity will be undertaken as per the conditions and strict regulation of the discharge consent, which is currently being determined, and will be issued and controlled by NRW. In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the EOD operation in the 1970s. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and other relevant consultees will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

A noise assessment has been undertaken and this includes baseline monitoring at Surfines (location 8 on ES Figure 13.1). Background noise levels at Surf Lines location were some of the highest measured, due to road traffic noise from A4086 and noise from activity in the car park, the industrial estate between the lagoons and the A4086 and the facility itself. The receptors will therefore be less sensitive to changes in noise levels.

23 Mads Huuse

Response Received

Objection to the Glyn Rhonwy development by QBC

1. Environmental concerns:

- The proposed scheme will have an output of 100 MW. The UK need for pumped storage of energy is projected to rise by 3.5 GW by 2025. The proposed development would only provide 2.8% of this. If UK demand is to be met by such small-scale plants it would need 35 such developments in pristine highland areas around the UK. Moreover, the revised Glyn Rhonwy scheme is designed to maximize profit from price fluctuations linked with balancing of the grid and intended to be emptied every day, generating a 20% net energy loss every day.
- The areal footprint is the size of Llanberis and only 30% within the brownfield site of Glyn Rhonwy. The rest is in an area designated Area of Outstanding Natural Beauty, right on the border with Snowdonia National Park and the head pond and other installations will be clearly visible from Snowdon and other areas within the park, in contrast to the views and conclusions given in the EIA.
- The Environmental Impact Assessment grossly mis-represents the impact on the local community along the upper access road through Waunfawr which will be adversely affected by traffic and noise. This is in direct contrast to the EIA which states that no

significant increase in traffic or nuisance is projected. Recent pilot drilling on a much smaller scale than the development highlighted the general traffic increase and the increase in abnormal loads and abnormally noisy machinery along the peaceful mountain road, both during works hours and out of hours including early mornings and evenings.

2. Health and safety concerns:

- The traffic up the unnamed road to Cefn Du is going to be severely increased with abnormal loads and multiple HGV trips daily and a large numbers of vehicles transporting workers up and down each day. HGV trips represent an increase of 300-900%, exceeding the limit for 'substantial' adverse effect. The traffic taking workers up and down each day will be a very significant increase at times when hardly any vehicles use the road. The traffic statement concludes the impact will be 'minor adverse', which conflicts with their own definitions. Only if traffic numbers are averaged over the day can the commuter traffic be considered incremental, but such an approach does not adequately capture the impact on local residents who are due to be woken up each day by a cortege of vehicles taking workers up the mountain.
- School children, walkers, bikers, equestrians and residents will all be severely impacted by increased traffic for up to 3 years. As there are no pavements and the road is single track. In particular school children will be at risk in early morning and afternoons.
- Numerous houses along the road are within a few metres of the road and situated on adverse slopes (up to 25% gradient), beneath the road level. These properties would suffer significant risk of collapse when subject to abnormal loads and vibrations from repeated 40 ton trucks passing.

Snowdonia Pumped Hydro's Response

The Applicants response to the relevant representation is set out below using the same notation as provided for ease of reference:

Point 1: Environmental concerns

- Pumped Storage is one of the most efficient and mature storage technologies around. It also has the longest lifetime and lowest cost per kWh stored. Additionally it is fast enough to help balance supply and demand and flexible enough to help reduce both renewable curtailment and displace fossil fuelled plant. In this way, pumped storage reduces carbon emissions by improving the efficiency of the UK generation fleet as a whole and Glyn Rhonwy is expected to have a carbon payback of just 6 months. The Development is partially within a Landscape Conservation Area and the Dinorwig Landscape of Outstanding Historic Interest as shown on ES Figure 3.2. It is approximately 600-700 m away from the boundary of Snowdonia National Park at its furthest southern extent (as shown on Figure 3.3). A zone of theoretical visibility (ZTV) has been undertaken in ES Figure 6.3 and this identifies the viewpoints within the National Park, namely VP1, VP2 and VP12. Photomontages of these viewpoints are shown in ES Figures 6.4 a – i. An Assessment of the Significance of Impacts on Development on Historic Landscape (ASIDOHL) has also need undertaken. The conclusions of the landscape assessment and ASIDOHL, combined with the DCO Requirement for a Landscape and Reinstatement Plan, (Requirement 6) have been accepted by Gwynedd Council, NRW, CADW and SNPA.
- The traffic methodology has been developed in line with the Institute of Environmental Management and Assessment's (IEMA) 'Guidelines for the Environmental Assessment of Road Traffic' (January 1993) and the 'Guidance on Transport Assessment' (DfT, March 2007). It has also been agreed with Gwynedd Council through the 2012 ES for the approved scheme. It should also be noted that the proposed construction traffic flows provided in Chapter 12 of the ES (used to assess the percentage impact on the road network) have been increased by 25% in order to provide a level of

robustness to the assessments and to present a worst case scenario.

- Traffic counts were undertaken on Thursday 26th March 2015 between 07:00-19:00 hrs to establish not only the peak hour traffic data, but also the daily traffic flow, which is more relevant to the construction period where vehicles will be arriving and departing throughout the working day.
- The traffic for the construction effect has been based upon the construction methodology and information provided relating to numbers of workers on site and types, sizes and numbers of any larger abnormal loads to the site. Based on this the construction traffic to both Q1 and Q6 of the Development has been quantified and assessed against base traffic levels, with the swept path of all critical vehicle types also being checked. From this analysis it can be demonstrated that all movements can be accommodated in a safe and efficient manner.
- For the Q1 site, vehicle access from the strategic highway network will be taken from the A55 at Junction 9, then A487 and A4085 to Waunfawr. For the Q6 site, vehicle access from the strategic highway network will be taken from the A55 at Junction 11, then A4244 and A4086 to Llanberis.
- A traffic assessment has been undertaken and is presented in Chapter 12 of the ES with the required mitigation summarised in Chapter 18 of the ES. The traffic assessment undertaken considers the impacts of construction and operational traffic which exits the A4085 and travels to Q1 through the village of Waunfawr and Groeslon. As part of the mitigation outlined in Chapter 12, the Applicant will prepare, submit and gain approval for a Construction Traffic Management Plan (as required by DCO Requirement 6 and 9) which will outline the traffic management which must be implemented through the construction phase. This will include restrictions on times of abnormal or large equipment and plant through the village, construction working hours, speed and safety measures to be implemented. This will be

prepared and must be approved by Gwynedd Council prior to the commencement of construction. The dedicated Environmental Liaison Officer will be the point of contact for all concerns and will also communicate traffic movements and the implementation of specific mitigation measures as appropriate.

- The Applicant has also had due consideration of the highway improvements required to the access to Q1, known locally as Ffordd Cefn Du. The swept path analysis was presented during statutory consultation within the Draft ES (issued as Preliminary Environment Information) and outlines the areas of improvement required. This is mainly above the cattle grid where drainage repairs, resurfacing, creation of passing places and stabilisation works are required. The section below the cattle grid to the junction with the A4085 will require resurfacing and drainage repairs. No passing places are required south of the cattle grid and the works will remain within the highway, with the road remaining as a single carriageway. These works will be undertaken under a Section 278 agreement between the Applicant and the Council, with the specification agreed.

Point 2: Health and safety concerns:

The Applicant is unsure where the figures of 300-900% have been obtained from.

- The percentage increases have been assessed at each of the following junctions, although it should be noted that the assessments relate to the road links on each approach to the junctions rather than the actual junction:
 - Waunfawr Crossroads;
 - A4085 / Waunfawr "T" Junction;
 - A4086 / Glyn Rhonwy "T" junction, and

- A4086 / A422 “T” junction.

Based upon 12 hour traffic surveys, the assessment established the base “No Development” two way vehicle flow on each approach to the above junctions.

The number of proposed development two way trips has then been added in order to ascertain the predicted daily increase in vehicle trips on the particular road link.

The impact has then been set out on each particular link on the local highway network, rather than the impact at an individual junction. This is important when considering the Waunfawr crossroads as only the traffic flow on Ffordd Cefn Du either side of the crossroads has been included and not the total flow on all approaches, as the main, priority, road is unaffected by the development traffic.

For example: Taking Month 29 and Ffordd Cefn Du to the east of the Waunfawr crossroads, as this represents the worst case impact.

It should be noted that we have used Passenger Car Units (pcus) in all our assessments whereby a car equals 1 pcu and an HGV equals 2.3 pcus. Therefore, in the worst case Month 29, Ffordd Cefn Du to the east of the Waunfawr crossroads is predicted to experience an increase of 178 cars / light vans and 71 HGV’s two way throughout a typical day. This then equates to a total of 249 vehicles but by using pcus which takes account of an HGV this increases to 341 pcus.

The base traffic flow is 305 daily two way trips.

The development will add a total of 178 cars / light vans and 71 HGV’s two way in a typical day, and this is comprised

of the following:

- 171 cars and light vans travelling between the top of Q1 and the bottom of Q6 at Glyn Rhonwy;
- 7 cars related to the daily commute of workers;
- 71 HGV's travelling along Ffordd Cefn Du and then using the A4085 / A4086 and A422 to access the wider highway network;
- This then gives a total of 341 pcus two way in a typical day.

It should also be noted that these have been increased by 25% above the actual predicted traffic flows in order to provide a level of robustness. The actual typical daily flows predicted are therefore 143 cars and light vans and 57 HGVs two way.

Therefore, based upon a daily flow of 305 vehicles and a development flow of 341, Ffordd Cefn Du to the east of the Waunfawr crossroads will experience a 112% increase in overall daily traffic in month 29. However, it should be restated that this is the worst case, with Ffordd Cefn Du to the west of the Waunfawr crossroads having a 67% increase due to the higher levels of base "No development" traffic. This is shown in Table 12.29 within Chapter 12 of the ES.

- Section 13.7.57 – 13.7.65 of the ES confirmed that effects at NSRs fronting the road will be temporary adverse. All access roads should be kept in good condition as most vibration effects occur from irregularities of road surfaces – this will be subject to the s278 agreement between the Applicant and Gwynedd Council for improvements on Ffordd Cefn Du. A speed limit for HGVs should also be applied to this road given the short distance to NSRs. It is not considered that vibration effects will cause cosmetic or structural damage to the properties. Vibration effects have not been

quantified at this stage but sources including Transport and Road Research Laboratory document "Traffic Induced Vibrations in Buildings" (1990) (TRL RR 246) have been consulted. A summary of findings from the document shows that research has shown that traffic induced ground borne vibrations do not cause significant damage to buildings. Any mitigation measures required to avoid potential significant effects from vibration will be managed through the NMP as required by Requirement 6

- Improvements to the highway network will include upgrading Ffordd Cefn Du to a robust industrial road specification designed for HGV vehicles. Along with widening the carriageway to a minimum of 4m from the the A4085 to the Q1 dam site (to enable the safe passage of construction vehicles as shown on the swept path analysis in ES Figures 12.1 – 12.6) additional space will also be provided for existing traffic that currently uses Ffordd Cefn Du to safely pass in new passing places from the cattle grid to the dam location. It should be noted that there is sufficient width in the majority of places south of the cattle grid and the main widening works are above the cattle grid. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.
- The Applicant is currently considering ways that the impact of construction traffic travelling along Ffordd Cefn Du can be reduced. One such proposal is at the cross roads in Waunfawr: Highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this would be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along

this section of road and provide areas of footway for the local residents to be able to be safely cross the road. Such measures are currently under discussion with Gwynedd Council Highways Department. Detailed plans will be discussed with local residents in due course. It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

- An assessment of noise and vibration has been carried out and is presented in ES Chapter 13. Mitigation has been proposed to limit the impacts on receptors as outlined in ES Chapter 18 Schedule of Mitigation and outlines that a Noise Management Plan is a Requirement of the DCO (Schedule 1, Requirement 6) as part of the Code of Construction Practice this is to be agreed with Gwynedd Council prior to the Commencement of Construction in addition the Applicant will set up a Liaison group to keep the local community informed of planned construction activities, timings and durations, they will also provide lines of communication where complaints can be dealt with.

24 Dr Jane Huuse

Response Received

Objection to the QBC Glyn Rhonwy development

1. Footprint: The huge environmental/physical footprint created by the scheme in order to potentially produce only 2.8% of the UK's 2025 pump storage needs. If approved this could create a precedent for degrading beautiful upland landscapes across the UK for private profit. Why not get companies, either private and/or public, to co-ordinate and economise on scale, ruining only a few sites of beauty, and agree to use profits for example to fund research in to improving energy efficiency for future generations?
2. With rapidly evolving battery technology (for example use of Vanadium batteries to balance the grid), it may be the case that the QBC type of pump storage is soon considered exceptionally inefficient. A landscape ruined in vain?
3. The Environmental Impact Assessment is not accurate on a number of points, some of which I would like to discuss in more detail. Incidentally all reports provided for previous planning permission consideration by Gwynedd Council had been commissioned by QBC with some start up funds from Gwynedd Council to develop the site. . Will a balanced view of the facts (also made by qualified environmental personnel (without the huge financial incentives)) be taken in to account if presented to this panel?
4. The construction phase of this development will have a severe impact on those living along the access route (particularly those

located in upper Waunfawr) and those in Llanberis. Many of the > 200 year old houses are within a few meters of access route (presently a narrow rural lane). Heavy goods vehicles using this route are likely to pose significant danger to school children, local children walking between houses (no pavement), buildings and walls. Some houses show strong potential for collapse. If this project gets the green light, then QBC proposes against the resident's will, to use this route for its heavy goods vehicles and their associated site personnel at any time from 7 am to 7 pm, putting a lot of current road users at avoidable risk.

5. I also contest the conclusion of the EIA's traffic section that concludes there will be insignificant disturbance from their heavy machinery and/or workers'/service vehicles using this access route. Pilot drilling on the development site resulted in vastly increased traffic counts around the clock and a strong increase in heavy noisy vehicles. Monitoring equipment was set up after site establishment and taken down before site abandonment and did thus not capture the most significant traffic increases. Thus there are major queries about the validity of the vibration and noise monitoring the company has carried out.

Snowdonia Pumped Hydro's Response

Please find the Applicants response using the same notation as provided for ease of reference:

1. Pumped Storage is one of the most efficient and mature storage technologies around. It also has the longest lifetime and lowest cost per kWh stored. Additionally it is fast enough to help balance supply and demand and flexible enough to help reduce both renewable curtailment and displace fossil fuelled plant. In this way pumped storage reduces carbon emissions by improving the efficiency of the UK generation fleet as a whole and Glyn Rhonwy is expected to have a carbon payback of just 6 months.
2. The visual impacts of the construction have been assessed from all key viewpoints and are presented in Chapter 6 of the ES. The viewpoints are shown in ES Figure 6.3 with the operational Development shown in photomontages presented in ES Figure 6.4 a – l. Construction impacts are temporary in nature and not shown on the photomontages. Gwynedd Council, NRW and SNPA

have no objection or further comments to the conclusion of this assessment.

3. The ES contains an independent assessment of the potential effects from this Development, including the anticipated construction and operational discharges, and identifies the environmental protection measures to which the developer has committed when undertaking various construction and operational activities. Neither the Applicant SPH, nor its parent company QBC have received any “start up funds” provided by the Gwynedd Council. The companies have been funded exclusively by private investors.

4. A draft Construction Traffic Management Plan has been produced (ES Appendix 16.1.3) to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This would also include the timing of any large delivery plants and also workers. Any large vehicle movements will be timed to avoid school times and commuter travels. The working hours are also controlled through DCO Requirement and cannot be changed without prior approval from Gwynedd Council.

5. The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week to allow residents to commute to and from work and also allow the school buses to pick up children in the local community. This will be a mandatory part of the Principal Contractors instruction and will be in addition to other traffic management such as restrictions on speed, highway management and control.

Improvements to the highway network will include upgrading Ffordd Cefn Du [Green Lane] to a robust industrial road specification designed for HGV vehicles. Along with widening the carriageway to a minimum of 4m from the cattle grid to the proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic that currently uses

Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

At the cross roads in Waunfawr highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this is proposed to be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road.

It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

The Applicant will produce a Construction Traffic Management Plan (Requirements 6 and 9) for approval by Gwynedd Council which will outline the mitigation that must be adhered to such as restrictions on times of movements and points of access and egress from the site. Construction working hours are outlined in Requirement 16 of the DCO

The Representor also mentioned a number of UXO specific concerns during the Open Floor Hearing on the 8th of March 2016.

These are as follows:

Re 'Storage of UXO, explosives and nerve gas at the end of the 'dead-end lane' [Ffordd Cefn Du]

As with all UK EOD operations of this type, on discovery all UXO would be dealt with in a single phase so that there is no storage of UXO, just the disposal operations. No evidence of chemical nerve gas at the site has been found.

Re the 'Need to ensure that any UXO will be dealt with by specialist personnel, under strict procedures within the Site.' Please see the below response from our contractor.

ZeticaUXO are currently being employed by the developer to address the UXO issues. ZeticaUXO is the UK's leading UXO specialist with a reputation for quality underpinned by in-depth understanding of UXO hazards, very high safety standards and a tenacity to ensure that any EOD Operations result in no disruption to local communities. ZeticaUXO have managed the removal and UXO disposal for many high profile and sensitive sites in the UK to include the Olympic Park, HS2, Gatwick Airport, Northstowe New Town and many other nationally, strategically-important infrastructure projects. Most recently, they managed and undertook the disposal of a number of 500lb bombs within a town/village situation, resulting in no disruption to the local community (previous finds had resulted in a 1.4km evacuation zone). All such operations are undertaken by a range of specialists with considerable experience in the military and commercial fields, to include explosives specialists, military contamination specialists (chemical, biological, radioactive, nuclear), UXO detection specialists, Ordnance Clearance Engineers and Ordnance Disposal Engineers. In-house specialists such as Mike Sainsbury provide guidance to the industry and government organisations such as the Environment Agency and Homes and Community Agency. The eventual UXO specialist employed during the construction phase of the project will be decided by the Principal Contractor, and will have similar credentials to ZeticaUXO as well as similar modes of operation. All relevant research undertaken by ZeticaUXO and the applicant will be made available to the eventual UXO specialist.

Re the request for 'cessation of the scheme in the name of public safety.'

The implementation of the EOD operation actually increases public safety by removing any potential hazards. The operation itself will not result in an increased risk to the local community and instead as the operation progresses to completion, the removal of

UXO will remove the potential safety or environmental hazard for the long term, and short term it will mitigate the current situation as cited by some respondents where breaches of security potentially allows local residents to gain access to the quarry pits and potentially encounter UXO.

25 Stephanie Duits

Response Received

I'd like to register as an interested party in regard to the Glyn Rhonwy Development. I belong to a swimming club of around 60 members and I am expressing my concerns particularly to the impact of the development of the Lagoons area of Llyn Padarn and the potential harm to water quality following the planned discharge into Llyn Padarn.

During the months of April to October, many members of my swimming club use the Lagoons area and Llyn Padarn at least twice per week for open water swimming and social activities (BBQs etc).

We are concerned with the location of pumping station for water abstraction particularly:

1. disruption to access during construction
2. damage to trees along the shoreline
3. impact on the amenity (which is heavily used by many locals) in terms of noise and light pollution.

?We would also like to make representation about the permanent loss of the Llyn Padarn amenity due to water pollution following the planned discharge from the development.

Glyn Rhonwy quarries were used to store 14,000 tons of bombs filled with tabun (a toxic nerve gas). Surplus and faulty ordnance was also disposed of in the quarries.

The site survey document by Zetica (“SITESAFE UXO DESK STUDY” - extracts quoted below) highlights a number of extremely worrying points including (and not restricted to):

1. “Records indicate that this disposal was not always successful. Firstly ordnance would often get lodged on rock shelves, in slate piles or within crevices when tipped into the quarry, never making it into the burning pit”.
2. “Given the volume of ordnance that required clearance, and the working practices of the period, it is possible that some explosive items were inadvertently disposed of in Pit2B and residues may have remained within some of the casings”

In relation to encountering live ordnance during clearing processes...

3. “This means that there are still live ordnance items within the remained of the [slate] pile, constituting a significant source of UXO hazard.”

In relation to the 1972 clearing process:

4. “During clearance of the slag heap it was discovered that the previous disposal process had been inefficient and was incomplete, with live and semi-destroyed material still in place. Unburnt magnesium powder was interspersed with live detonators and other explosives.”
5. “It should be noted that the RAF was unwilling to certify the quarries completely free of explosives, despite rendering safe each disposal area.”
6. “During recent Site walkovers [in 2015] , the Client has encountered potential items of UXO on the access path to Pit 2A.....These discoveries indicate that, despite the extensive EOD operation undertaken, not all items of ordnance within the quarry pits were accounted for.”

These points (and many others in the document) indicate, at the very least, a considerable risk of contamination of any water

discharged from the development into Llyn Padarn

Snowdonia Pumped Hydro's Response

The Applicant wishes to respond using the same notation as provided:

1. The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. However the safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption. We would welcome further information from the respondent on the timings and location of this competition.

2. Trees will have to be removed in the immediate working area of the spillway infrastructure to facilitate access and placement of the spillway infrastructure. A tree survey will be undertaken prior to construction and any trees removed will be mitigated as per DCO Requirement 12 as part of the Habitat Management Plan (HMP). The spillway infrastructure will be micro

sited to avoid any trees of note or root protection areas where trees can be retained. Extensive ecological surveys have been undertaken for the last four years and the conclusions of these surveys and the assessment contained within the ES and Habitats Regulations Assessment has been accepted and approved by NRW. The mitigation required to be implemented to ensure no significant effects is summarised within Chapter 18 Schedule of Mitigation.

The design of the pumping station has been in full consultation with NRW which includes placing the outfall pipe above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will mark the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

3. Once complete the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents which are currently being determined by NRW.

With respect to the next section of the relevant response regarding water pollution:

It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential

effects of unexploded ordnance from the construction of the Development and Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlined the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (Appendix 9.1 and document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

With regards to the next section on UXO, we have used the same notation for ease of reference:

There is no evidence to suggest that anything other than conventional UXO was disposed of in the quarries, not Tabun.

1. This relates to the UXO disposal on the site (i.e. conventional UXO such as High Explosive and Incendiary items and not chemical weapons). Despite what might be commonly understood by the public, causing UXO to detonate can be very difficult and, as such, some failures in an UXO disposal operation are to be expected. Any remnants of such failures would either have been dealt with at the time, or would be dealt with as part of any future clearance works. It is for this reason that a proactive UXO clearance task is being proposed to mitigate any remaining UXO hazards.
2. The volume of ordnance relates to the total number (approximately 14,000) that passed through the site during its lifetime (between 1946 and 1947). At no point was the site used to conventionally 'store' chemical weapons. Instead RAF Llanberis acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.
- 3) During the clearance of the site by the RAF in the 1970s, the RAF made a decision that where UXO items contained <0.5% live UXO, then clearance activities were to be halted. As such, whilst the quantity of live UXO is likely to be very low, the likelihood of some live UXO remaining on the site is considered to be high. It is for this reasons that a proactive approach to UXO is being implemented.
- 4) Again as above, it is for this reason that a proactive approach will be employed.

5) Quarries were not totally cleared, see above.

6) See above.

26 Christine Jordan

Response Received

I am registering as an interested party in regard to this development as a local resident who will be impacted by the proposed scheme.

I have previously submitted my concerns several times to the Developer at consultation stage ,but these concerns have not been adequately addressed and I wish to make representation to see that the impacts on myself and my neighbours are reduced or sufficiently mitigated.

I AM CONCERNED ABOUT SAFETY ON MANY ASPECTS.

1.The proposal to use our small lane as access for all construction traffic for the building of the Dam and reservoir is totally unsuitable and the lane ,even with some added passing places is not fit for purpose. This phase will go on for several years, during which time we shall have our safety compromised,our house devalued or damaged and feel at risk every time we venture out of our homes.The applicant has no intention of being the developer,but will sell the project and promises made may never be fulfilled.We shall in practice have to actively police and try to enforce any conditions meant to ensure our safety.

2.The previous use of Glyn Rhonwy as a disposal location for bombs, nerve gas and other ordnance makes it totally unsafe and unacceptable as a site through which there will be tunnels drilled.What could happen if these old and unstable items are

disturbed?The Zetica report makes chilling reading and highlights the real dangers we could all face.

3.The use of Llyn Padarn as the water supply and for discharge is putting in danger the unique qualities of this iconic lake.The water sports enjoyed by locals and tourists safely throughout the year is at risk ,we cannot allow this natural resource to be destroyed.

4.The development of much more sophisticated and self contained electricity storage facilities are becoming a reality,Bill Gates has made this one of his missions.This will make pumped storage uneconomic and unviable,when this happens and the managing company goes out of business who will maintain the dam and protect the village of Waunfawr below? This would be a permanent structure that will change the landscape forever but could hold financial and hidden dangers for the local council in the future.

I conclude that this development is unnecessary,enhancing the existing connection from Dinorwigto the Grid enanbling it to run at full capacity is surely more sensible. This profit making scheme for Snowdownia Pumped Hydro is compromising safety for local residents on many aspects,please listen to our concerns.

Snowdonia Pumped Hydro's Response

The Applicant's response to the relevant representation is set out below using the same notation as provided for ease of reference:

1. A traffic assessment has been undertaken and is contained within Chapter 12 of the ES. To enable the larger construction vehicles to travel up Ffordd Cefn Du, some improvements will be required although most of these will be above the cattle grid. This will include upgrading the existing carriageway to a robust industrial road specification designed for HGV vehicles; along with widening the carriageway to a minimum of 4m throughout its entirety from the cattle grid to the proposed dam site to enable the safe passage of construction vehicles and also provide additional space for the existing public who currently drive along Ffordd Cefn Du to safely pass each other. Additional formal passing places will be incorporated at set intervals along the Ffordd Cefn Du

to ensure the road, these have been positioned to ensure at critical points along Ffordd Cefn Du forward visibility can be achieved ensuring construction vehicles can pull in and give way to other road users and the general public. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

The Applicant is currently considering ways that we can reduce the impact of construction traffic travelling along Ffordd Cefn Du. One such proposal is at the cross roads in Waunfawr highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this is proposed to be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road.

All of the works will be completed on behalf of Gwynedd Council Highways under a Section 278 Agreement. This will be entered into by the Developer, Land Owner and Gwynedd Council Highway. Once completed, the works will be adopted by Gwynedd Council Highways.

Prior to commencing construction, the Applicant must prepare and submit for approval by Gwynedd Council, a Construction Traffic Management Plan in order to comply with DCO Requirements 6 and 9. The key purpose of the CTMP is to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (especially Heavy Goods Vehicles, HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week. For the Q1 site, vehicle access from the strategic highway network will be taken from the A55 at Junction 9, then A487 and A4085 to Waunfawr. For the

Q6 site, vehicle access from the strategic highway network will be taken from the A55 at Junction 11, then A4244 and A4086 to Llanberis.

2. It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance. Research from several sources, undertaken by the Applicant, has confirmed that at no point was the site used to conventionally 'store' chemical weapons. Instead RAF Llanberis acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

3. Water sampling was undertaken to inform the Water Resources Assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlined the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the

water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

The quarries need to be dewatered prior to further investigation for unexploded ordnance. This dewatering activity will be undertaken as per the conditions and strict regulation of the discharge consent, currently being determined and will be issued and controlled by NRW.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and any other relevant regulator will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn (discussions with utility companies are ongoing) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. However the safety of the users of Llyn Padarn and the construction workforce is of absolute

priority and importance.

4. The best chemical lithium, vanadium and other batteries are currently more expensive than Pumped Storage. In addition they have their own environmental challenges, have a shorter life and are generally unproven at scale. Furthermore they tend to have a smaller capacity[MWh] to output[MW] ratio meaning that they are not well suited to load shifting or addressing the full breadth of the daily morning and afternoon peaks in electricity demand. Because they are more expensive, shorter lived and less useful at Grid Scale than pumped storage, there will likely be a continued economic viability for pumped storage. The Dinorwig scheme is a separate scheme owned and operated by different developers than the Applicant and the Applicant cannot comment on the efficiency of that scheme. However the Applicant understands that Dinorwig already runs at full capacity, and has recently completed an upgrade to expand its capacity, though its oil-based grid connection cooling system running alongside Llyn Padarn does require frequent maintenance because the facility is being used much more frequently than it was originally designed for.

27 Snowdonia Wildlife Tours

Response Received

1 My concern about the 2 species of scheduled 1 birds in the quarries.

The Chough and Peregrine falcon which the latter failed to breed this Spring due to disturbance by boring holes so near the nest.
Yes boring holes in the second week of May ???

As I and others have been watching this pair for over a decade, its so sad to see the regeneration of wildlife trampled by big machinery in just a few weeks.

2 The tabun bombs left in the quarry then just burried with slate to cover up.

Emptying the quarry could risk poisoning the water system

Do Llanberis need another dead lake like Llyn Peris

Snowdonia Pumped Hydro's Response

The Applicant's to the relevant representation is set out below using the same notation as provided for ease of reference:

1. There is no formal guidance providing definitive disturbance distances with regards to breeding birds. For information we attached a guidance note "A Review of Disturbance Distances in Selected Bird Species, M Ruddock & D P Whitfield (200&) for

information, page 135 provides details on schedule 1 birds and peregrine in particular. Specific note should be given to page 138 regarding blasting but it concludes that tolerance of human activity is highly likely. Therefore experienced personal judgement from a qualified ornithologist is often required. The Applicant employed a qualified independent ecologist for the watching brief during the preliminary site investigation works. The distance depends on the type of disturbance particularly, but as you will read in the summary, peregrine is regarded as being relatively good at withstanding some 'disturbance' given it often nests in active quarries and busy cities (it will habituate to regular distant noise etc). In addition, NRW have confirmed in a meeting held on the 15th July 2015 with the Applicant, that they saw evidence that the peregrines had successfully reared chicks. In terms of nestling survival, the BTO website provides information regarding the probability of young reaching 1 year, and this is 0.544

2. It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance. At no point was the site used to conventionally 'store' chemical weapons. Instead RAF Llanberis acted as a transit point to transfer the items from train wagons to lorries, during which time the chemical munitions were not removed from their crates, before heading on to RAF Llandwrog. There is a clear recorded chain of custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive Explosive Ordnance Disposal (EOD) operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.

The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction

works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the EOD operation in the 1970s. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlined the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

The quarries need to be dewatered prior to further investigation for unexploded ordnance. This dewatering activity will be undertaken as per the conditions and strict regulation of the discharge consent, currently being determined and will be issued and controlled by NRW.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and any other relevant body will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

28 Dr David Bellamy on behalf of Claire Bellamy

Response Received

3 years of large trucks going up and down 1 vehicle wide roads is going to be a logistic and safety disaster for walkers and car users. Will the trucks reverse when encountering a car (I think not) or will the car have to find the nearest ditch, and will walkers simply abandon visiting the area? For many walkers "the journey" is as important as "the destination" and if they are going to be exposed to continual vehicle pollution they are simply going to deem the area a no-go zone despite the impressive destination.

Similarly, people want to see 360 degrees of beauty when they visit Snowdon; we don't want to visualise what it will be like once the construction is finished. Can Wales afford to have droves of people delaying their visit until they can have the truly panoramic vision promised?

Will the expected light pollution further demerit Snowdon and the surrounding hills - will the phrase "it used to be beautiful" stick?

Given that no real evaluation of the physical impact the trucks will have on the houses that are only a few feet from the roads being used, is there any certainty that serious structural damage will not eventually occur? Will the cottages that play an integral part in the giving Wales its heritage and beauty be destroyed (never mind the legal issues that will ensue if structural damage occurs to cottages that have stood firmly for centuries)?

These are questions about long-term issues and also takes into account that tourists (those who bring needed money into the

area) are quite picky. They are on the net and will know if it is worth visiting Snowdon and the surrounding area. Facebook users and Tweeters will have a lot to say. The impact of many tweets talking about noise pollution from trucks and how walkers were forever watching out for huge vehicles as they trudged up narrow roads could be horrific on the economy.

Snowdonia Pumped Hydro's Response

A assessment of the traffic impacts expected along the access road to Q1 has been provided in Chapter 12 of the ES. Mitigation is outlined in Chapter 18 of the ES, this considers the impacts on the village of Waunfawr. The Applicant will produce and gain approval to a Construction Traffic Management Plan (Requirements 6 and 9) which will outline the mitigation that must be adhered to such as restrictions on times of movements and points of access and egress from the site. The improvement works are not subject of this DCO and are being progressed with the local Highways Authority under a Section 278 Agreement.

A draft Construction Traffic Management Plan has been produced to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This is contained within Appendix 16.1.3 of the ES.

The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week. It is envisaged that such periods will be restricted to 08.30-16.30 during the week and 09.00-13.00 on Saturdays, with no working on Sundays or Public Bank Holidays.

Improvements to the highway network will include upgrading Ffordd Cefn Du to a specification suitable for HGV vehicles, and agreed with Gwynedd Council Highways. Along with widening the carriageway to a minimum of 4m from the cattle grid to the proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic

that currently uses Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

The Applicant is currently considering ways that we can reduce the impact of construction traffic travelling along Ffordd Cefn Du. One such proposal is at the cross roads in Waunfawr: Highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this would be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road. Such measures are currently under discussion with Gwynedd Council Highways Department and will be discussed with local residents. It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

The landscape and visual impact assessment is presented in ES Chapter 6, which includes assessment from viewpoints including Snowdon (VP1 as shown in ES Figure 6.4a) and Moel Eilio (VP2 as shown in ES Figure 6.4b). Requirement 6 requires that a landscape and reinstatement plan be produced and approved prior to commencement. Construction impacts will be temporary. There will necessarily be lighting during construction for health and safety reasons and minimal safety lighting. During night and periods of darkness directional security lighting will be used. To minimise impacts on Environmental Zones in the area, the Development will conform to the requirements of the Obtrusive Light Limitations for Exterior Lighting Installations as stated in the T&CPA decision. Requirement 19 requires an External Lighting Plan to be submitted to and approved by Gwynedd Council in

consultation with NRW and SNPA in writing prior to the commencement of construction.

A local liaison group will be set up to discuss matters relating to noise and vibration effects from the development's construction, with representatives from relevant stakeholders. Works schedule, giving warning to residents regarding periods when higher levels of noise may occur during specific operations, and providing them with lines of communication where complaints can be addressed. Requirement 6 requires a CoCP to be submitted to and approved by Gwynedd Council (in consultation with NRW as appropriate) in writing prior to the commencement of construction.

29 Cherry Bartlett

Response Received

The proposal from Snowdonia Pumped Hydro (the company) makes no sense in energy terms. The amount of energy that will be generated even from the enlarged scheme will be a drop in the energy ocean. The existing Dinorwic system is, according to those who conduct tours around it, rarely used to its full capacity. Utilising an existing facility is a much more sensible approach.

The company proposals involve a major impact on the local communities of Waunfawr and Llanberis. Both these places are reliant on tourism for the majority of their income and the disruption that will be involved in creating this facility will create a long term downturn in this industry.

The proposed access route for construction through Waunfawr and Groeslon is totally unsuitable for the heavy traffic that will be required. The road can never be brought up to the standard required and represents considerable safety and sanity threats to those who live along it. A number of properties actually abut the road and will be particularly threatened. There have been no tangible answers provided by the company when these concerns have been raised in the past.

If the company receive planning permission they will undoubtedly then sell the project on, possibly to overseas investors and any profits will disappear from Wales - indeed they would never come to Wales as the company is based in England. Few long term jobs will be delivered and the communities most affected can only lose from the development.

Snowdonia Pumped Hydro's Response

The Dinorwig scheme is a separate scheme owned and operated by different developers than the Applicant. It is understood by the Applicant that Dinorwig already runs at full capacity, and has recently completed an upgrade to expand its capacity.

An assessment of impacts on tourism has been undertaken and the results presented in Chapter 15 of the ES. Mitigation is proposed in Chapter 18 of the ES which includes temporary and permanent closures and diversions to PRoW which is secured through the DCO (Articles 11 and 13, the closure and diversions are set out in schedules 2,3 and 4 and shown on the Access plan (DCO Plan 2.09.4)

A thorough assessment of the traffic impacts expected along the access road to Q1 has been assessed in Chapter 12 of the ES. Mitigation is outlined in Chapter 18 of the ES, this considers the impacts on the village of Waunfawr. The Applicant will produce and gain approval to a Construction Traffic Management Plan (Requirements 6 and 9) which will outline the mitigation that must be adhered to such as restrictions on times of movements an points of access and egress from the site.

A draft Construction Traffic Management Plan has been produced to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This is provided in Appendix 16.1.3 in the ES

The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week. It is envisaged that such periods will be restricted on Saturdays, with no working on Sundays or Public Bank Holidays.

Improvements to the highway network will include improving Ffordd Cefn Du to a specification suitable for HGV vehicles, and agreed with the local Highway Authority. Along with widening the carriageway to a minimum of 4m from the cattle grid to the

proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic that currently uses Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

The Applicant is currently considering ways that we can reduce the impact of construction traffic travelling along Ffordd Cefn Du. One such proposal is at the cross roads in Waunfawr: Highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this would be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road. Such measures are currently under discussion with Gwynedd Council Highways Department. Detailed plans will be discussed with local residents. It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

Impacts to the local economy in terms of short and long term employment from the scheme, these are presented in ES Chapter 15. The Applicant, where possible, will promote the use of local contractors during construction and the employment of local people throughout construction and operation, the latter of which is expected to result in the creation of 25-30 permanent jobs.

30 Mr Neville E.Gray-Parry

Response Received

Our property is served by a private water supply, our concern is therefore any effect on the local water table and continued supply of water to our property which is a grade 2 star listed property with grade 2 registered gardens which contain a series of waterfalls and features which also use the water gained from our own reservoir which is served by springs from Cefn Du. There is no borehole to supply this water only a private reservoir

Snowdonia Pumped Hydro's Response

Bryn Bras Castle, Llanrug is located at NGR SH544626, approximately 2.5km north of Q1 and 3km north west of Q6. There is a reservoir shown on the OS map centred on NGR SH546621, approximately 2km north of Q1. It is assumed that this is the reservoir that supports the water features and provides the private water supply source to the property. Q1 is located on the northern flank of Cefn-Du and it is likely that the reservoir is fed by surface water runoff and springs located in the catchment of the reservoir on Cefn-Du, as indicated by the owners.

Cefn-Du rises to a high point of 442mAOD approximately 400m north west of Q1. Quarry Q1 is on the south eastern slope of Cefn-Du and Q6 is on the lower eastern slope. It is considered that the water supply to Bryn Bras Castle and the reservoir will not be impacted by the proposed development as:-

1. There is a surface water divide on Cefn-du separating the catchments to Bryn Bras Castle reservoir and the development. Surface water runoff and recharge to any springs which feed the Bryn Bras Castle reservoir depend on rainfall on the northern slope of the mountain. Runoff from the catchments to Q1 and Q6 is fed from the southern and south eastern slopes of the mountain. There is no hydrological connection between the two catchment areas as shown on Figure 9.2 of the ES.

2. The area around Bryn Bras Castle is underlain by the Cambrian, Padarn Tuff Formation whereas the two quarries have been excavated principally within the younger, Llanberis Slates Formation. Only a very small area of the development to the west south west of Q1 is underlain by the Padarn Tuff Formation. As the Padarn Tuff Formation will not be disturbed by the construction works, there will be no impact on the hydrogeological conditions within the strata and hence no impact on the groundwater conditions at Bryn Bras Castle.

3. Groundwater flow beneath the development area is principally to the north east to Llyn Padarn with a possible component in the vicinity of Q1 to the south west (see response to Questions 8.5a and 8.5b). There is no evidence of groundwater flow to the north towards Bryn Bras Castle.

4. Surface water flow from the northern side of the development has been well characterised with drainage to the north and north east towards Llyn Padarn. There is no plausible flow path between the development site and the reservoir feeding Bryn Bras Castle due to a number of surface water divides.

In summary, it is concluded that there are no hydrological or hydrogeological connections between the development area and the water supply source to Bryn Bras Castle. Accordingly, it is concluded that the surface water and groundwater inflows to the reservoir above Bryn Bras Castle are not at risk from the proposed development and that the water supply to the property will not be affected.

31 Tony Grant

Response Received

Health & Safety

- 1/ The Zetica report on munitions storage at Glyn Rhonwy in and of itself should prohibit any development involving underground working at the site.
- 2/ The proposed construction route via a single track lane through Waunfawr constitutes a serious risk to centuries' old buildings without foundations, resultant damage/collapse from vibration due to excessive loads poses a serious threat to safety of inhabitants.

Environmental

- 3/ The area adjacent to Glyn Rhonwy and the Snowdonia National Park has just been awarded 'Dark Sky' status. The 'security lighting' proposed would see this status revoked.
- 4/ The footprint of the site is far bigger than neighbouring Dinorwic, but would provide less than 5% of its output. The site would be an eyesore, viewable from the summit of Snowdon, and detrimental to the National Park/tourism as a whole. Dinorwic currently runs at less than 25% of its capacity.

5/ There is a significant flood risk to both Llanberis and Waunfawr/Betws Garmon, should accidental spillage occur. Water pollutants could also damage the ecosystem in Llyn Padarn, and pollute private water supplies serving up to 50 households. Moreover, excessive rainfall, which at present drains from Cefn Du into the whole of the surrounding area of Llanberis, Cwm y Glo, Waunfawr, & Betws Garmon, could only drain into Llyn Padarn once SPH is operational, increasing the flood/pollution risk significantly.

6/ No in-depth environmental study of flora and fauna was conducted, the report submitted to Gwynedd Council was incomplete, inaccurate, and missed protected species.

Energy Generation

7/ Pumped storage does NOT produce electricity, only partially recycles. With it's own maintenance and security/lighting proposals, the scheme would at best be 75% efficient, and is not 'green' as suggested.

8/ Vanadium batteries are viable large, industrial scale, long lifetime, with multiple charge/discharge cycles in excess of previous battery technology, and which actually store electricity, not water. REDT is a leading British company developing and installing this technology at present (not years in the future). Thus pumped storage is already obsolete.

Long Term

9/ Detrimental health aspects are difficult to determine in advance, noxious pollutants from the construction could take several years before becoming apparent. Similarly, once operational, noise/vibration from the overnight pumping could disrupt sleep for many local residents, as sound travels more 'efficiently' through solids (such as the geological substrate of this area) and be more obtrusive in an area which is normally so still and quiet.

10/ From point 5 above, the power generation would need to be suspended during heavy rainfall to avoid the scenario stated.

Snowdonia Pumped Hydro's Response

The Applicant's response to the relevant representation is set out below using the same notation as provided for ease of reference:

1. The health and safety of the environment, local communities and the workforce is of paramount importance. It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The primary aim of any such operations is to ensure that any potential prospect for an unexpected detonation is considered and properly mitigated. UXO will be dealt with in a phased manner as appropriate to the works, ensuring the development goes ahead safely. Typically these phases comprise:-

- Detailed UXO hazard identification – Confirming the type, nature, condition, location and likely hazard from the anticipated UXO.
- UXO detection – Where appropriate, the location of UXO is confirmed through visual/detection techniques.
- Explosive Ordnance Clearance – Any UXO related items are investigated and items classified as hazardous, non-hazardous or non-UXO.
- Explosive Ordnance Disposal – Any hazardous UXO is made safe.

Any UXO deemed hazardous will be made safe through a controlled explosion. Such operations are undertaken routinely, typically with the public unaware as modern and commercial approaches are designed to have no real impact on the local community. The circumstances for Q6 are not extraordinary, with specialist contractors routinely dealing with similar sites around the UK. The

implementation of the EOD operation actually increases public safety by removing any potential hazards. The operation itself will not result in an increased risk to the local community and instead as the operation progresses to completion, the removal of UXO will remove the potential safety or environmental hazard for the long term, and short term it will mitigate the current situation as cited by some respondents where breaches of security potentially allows local residents to gain access to the quarry pits and potentially encounter UXO.

2. To minimise adverse vibration effects from construction traffic it is recommended that good conditions are maintained on relevant routes, as most vibration effects occur as a result of irregularities on the road. On Ffordd Cefn Du, a s278 agreement between the Applicant and Gwynedd Council will ensure that the road will be maintained in good condition (once improved prior to construction) and that any damage or wear to the road is rectified accordingly. Additionally a lower speed limit is controlled through the CTMP for HGVs than regular vehicles. Research has shown that ground borne vibration effects from construction traffic do not cause significant structural damage at buildings (Transport and Road Research Laboratory document "Traffic Induced Vibrations in Buildings" (1990)).

3. During night and periods of darkness directional security lighting will be used. To minimise impacts on Environmental Zones in the area, the Development will conform to the requirements of the Obtrusive Light Limitations for Exterior Lighting Installations as stated in the T&CPA decision. Requirement 19 requires an External Lighting Plan to be submitted to and approved by Gwynedd Council in consultation with NRW in writing prior to the commencement of construction, this will also consider the dark skies status of the area.

4. A zone of theoretical visibility (ZTV) is presented in ES Figure 6.3 and this identifies the viewpoints within the National Park, namely VP1, VP2 and VP12. Photomontages of these viewpoints are shown in ES Figures 6.4 a – l. An Assessment of the

Significance of Impacts on Development on Historic Landscape (ASIDOHL) has also need undertaken. The conclusions of the landscape assessment and ASIDOHL, combined with the DCO Requirement for a Landscape and Reinstatement Plan (Requirement 6), have been accepted by Gwynedd Council, NRW, CADW and SNPA.

5. A flood consequences assessment has been undertaken by the Applicant and presented in Chapter 10 of the ES, Chapter 18 of the ES summarises mitigation and outlines that Requirement 6 requires an Emergency Response and Flood Risk Management Plan (ERFRMP) to be submitted to and approved by Gwynedd Council (in consultation with NRW where appropriate) in writing as part of the CoCP prior to the commencement of construction. Requirement 6 also requires submission and approval of a Water Management Plan and a Pollution Prevention plan. The flood consequences assessment and the conclusion of the flood risk chapter within the ES have been approved by NRW.

6. Extensive ecological surveys have been completed over the last four years and ES Chapter 7 and ES Appendix 7.1 to 7.21 provides these survey results on terrestrial and aquatic flora and fauna, protected species. A Habitats Regulations Assessment in relation to potential effects on Natura 2000 sites / designated sites has also been undertaken and is contained within the No Significant Effects Report (Doc Ref; 5.04). Mitigation is summarised in ES Chapter 18 for the various species and habitats present on site. Requirement 6 requires submission and approval of a CoCP, the CoCP requires a number of other plans to be produced as part of this overall plan, these include a Pollution Prevention Plan (PPP), Habitat Management Plan(HMP) and a Water Management Plan. In additional Requirement 7 requires submission and approval of a bio-security plan and light spill will be controlled through Requirement 19. The conclusions of ES Chapter 7 and the HRA that the Development will have no significant effects subject to the implementation of the mitigation outlined have been accepted by NRW and Gwynedd Council.

7. Pumped Storage is one of the most efficient and mature storage technologies around. It also has the longest lifetime and

lowest cost per kWh stored. Additionally it is fast enough to help balance supply and demand and flexible enough to help reduce both renewable curtailment and displace fossil fuelled plant. In this way pumped storage reduce carbon emissions by improving the efficiency of the UK generation fleet as a whole and Glyn Rhonwy is expected to have a carbon payback of just 6 months.

8. Vanadium flow batteries are a relatively immature energy storage technology, which are larger in scale to most chemical batteries, however the largest in existence is a 5MW, 10MWh system in China. By contrast the proposed scheme is 99.9MW/700MWh in scale. Whereas the 0.1MW, 1.68MWh REDT battery proposed on the island of Gigha in Scotland will receive £3.6m in government support, equivalent to £36m per MW or £2.14m per MWh, the proposed Pumped Storage facility is estimated to cost £160m, or £1.6m per MW, £0.23m per MWh capacity. An equivalent REDT system based on the Gigha installation would require 8,000 20' containers.

9. The pumping station is expected to operate on an intermittent basis when “top up” abstractions are required. This is expected to be infrequent throughout its operational life and as such, noise effects are only expected for short durations. Actual noise levels are expected to be adequately mitigated through the design of the pumping station (chamber, access panels, etc.). The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained with the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately

70m beneath ground level. DCO Requirement 7 requires an operational noise management plan which includes the undertaking of noise assessments once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped 'Procedure for the assessment of low frequency noise complaints NANR45' (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as necessary following this assessment.

10. The Development is intended and designed to be run in all weather conditions, the dams have been designed in full compliance with the Reservoirs Act 1975. The normal maximum operational water level is 392m AOD. The overflow level is 393m AOD which provides up to 1m of freeboard for operating water level fluctuations before any overflow (spilling) would occur. A further 2m of freeboard above the overflow is provided, primarily for wave action. In circumstances where there is excess water in the system e.g. during periods of heavy rainfall and periods of in operation, this will be managed in accordance with Requirement 20; the Excess Water Management Plan.

32 Peter Frost

Response Received

I am concerned about the potential danger to health posed by the noise of the Glyn Rhonwy pumped storage scheme whilst it is operating. The similar, existing pumped storage scheme at Dinorwig creates a loud, low frequency noise when operating, and this is audible over a long distance. There is considerable, peer-reviewed scientific evidence about the danger to human health posed by man made noise, and with the village of Llanberis so close to the Glyn Rhonwy site, the potential for harm over the operating lifetime of this scheme is considerable. I would like to raise these serious health concerns, and provide details of the science behind them. In the interim, I refer the Inspectorate to Section 6 of the Welsh Government's Noise Action Plan for Wales 2013 - 2018

Snowdonia Pumped Hydro's Response

The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained with the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation

measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately 70m beneath ground level. DCO Requirement 7 requires an operational noise management plan which will include a requirement to undertake noise assessment once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped 'Procedure for the assessment of low frequency noise complaints NANR45' (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as necessary following this assessment.

33 Alessa Jaending

Response Received

The road is unsuitable for the amount of traffic.

There will be poor access for emergency vehicles.

It will be difficult to get to our home and to away from our home due to large trucks using a narrow lane.

Spoil the landscape.

Large amount of noise pollution and general disruption for what seems like very little rewards.

Snowdonia Pumped Hydro's Response

A draft Construction Traffic Management Plan has been produced to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This has been provided in Appendix 16.1.3 of the ES.

The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week.

Improvements to the highway network will include upgrading Ffordd Cefn Du to a specification suitable for HGV vehicles, and

agreed with the local Highway Authority. Along with widening the carriageway to a minimum of 4m from the cattle grid to the proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic that currently uses Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

The Applicant is currently considering ways that we can reduce the impact of construction traffic travelling along Ffordd Cefn Du. One such proposal is at the cross roads in Waunfawr: Highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this would be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to be safely cross the road. Such measures are currently under discussion with Gwynedd Council Highways Department. Detailed plans will be discussed with local residents. It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

A zone of theoretical visibility (ZTV) has been prepared and is included as Figure 6.3 in the ES. This figure identifies the viewpoints within the National Park, namely VP1, VP2 and VP12. Photomontages of these viewpoints are shown in ES Figures 6.4 a – l. An Assessment of the Significance of Impacts on Development on Historic Landscape (ASIDOHL) has also need undertaken. The conclusions of the landscape assessment and ASIDOHL, combined with the DCO Requirement for a Landscape and

Reinstatement Plan (Requirement 6), have been accepted by Gwynedd Council, NRW, CADW and SNPA.

Some temporary effects during construction phases are considered to have the potential to be major when not mitigated. However, through careful consideration of effects and best practice these effects can be mitigated to minor effects. Mitigation methods include regular road maintenance (especially on Ffordd Cefn Du under the s278 agreement with Gwynedd Council) and imposing speed limits for construction traffic through the Construction Traffic Management Plan (as required by DCO Requirement 6. Regular monitoring of noise and vibration will also be undertaken as necessary at nearby sensitive receptors during construction in addition to liaison and communication via the Environmental Liaison Officer on the timings of certain critical path construction activities such as blasting or the delivery of abnormal loads.

Operational effects have been assessed and are considered to be negligible at NSRs. The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained with the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately 70m beneath ground level. DCO Requirement 7 requires an operational noise management plan which will include a requirement to undertake a noise undertaken once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped ‘Procedure for the assessment of low frequency noise complaints NANR45’ (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as

necessary following this assessment.

34 Dorrie Jandling

Response Received

The road is unsuitable for the amount of traffic and size/weight of vehicles and will damage water supplies to the houses.

There will be poor access for emergency vehicles.

It will be difficult to get to our home and to away from our home due to large trucks using a narrow lane.

Spoil the landscape.

Large amount of noise pollution and general disruption for what seems like very little rewards.

Moved to the area for a quiet life, and paid for that privilege.

Snowdonia Pumped Hydro's Response

A draft Construction Traffic Management Plan has been produced to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This is provided in Appendix 16.1.3 of the ES.

The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week.

Improvements to the highway network will include improving Ffordd Cefn Du to a specification suitable for HGV vehicles, and agreed with the local Highway Authority. Along with widening the carriageway to a minimum of 4m from the cattle grid to the proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic that currently uses Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.

The Applicant is currently considering ways that we can reduce the impact of construction traffic travelling along Ffordd Cefn Du. One such proposal is at the cross roads in Waunfawr: Highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this would be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road. Such measures are currently under discussion with Gwynedd Council Highways Department. Detailed plans will be discussed with local residents. It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

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Operational effects have been assessed and are considered to be negligible at NSRs. The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained with the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately 70m beneath ground level. DCO Requirement 7 requires an operational noise management plan which will include a requirement to undertake a noise assessment to be once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped 'Procedure for the assessment of low frequency noise complaints NANR45' (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as

necessary following this assessment.

35 Haf

Response Received

I have read and understood ! Im against this planning as i live locally and use the area a lot for leisure use with my two children . We use the lagoons to swim and are a member of the local canoeing club that uses the lake . It is a shame for any development to use and abuse this wonderfull lake. It would be an eye sore to the land as i have seen the work they do on the way to Beddgelert from Waunfawr on the national park and still they have not sunk the ugly pipe into the ground . It is all about their fat pocket and they don't care about what they ruin as they have no intresting only to make money .It is easy to pinpoint a area on a map for such a sight and not know anything about the local use . My fingers are crossed that this development will be rejected as I think the scale of the project will damage the local wildlife and habitat of the rear birds we have on the lake and beond on Cefn du, Glyn Rhonwy. It would not creat more jobs as it is specialized work and the would already have their manpower for the project. I think the need to build something closer to the south where the electritity surge would be for . Do it on your land not our beauty. Nid oes angen y project yma o gwbl yn Glyn Rhonwy mae'r ardal yma yn berffaith . Diolch yn fawr iawn

Snowdonia Pumped Hydro's Response

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn

(discussions with utility companies is ongoing) and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption.

Trees will have to be removed in the immediate working area of the spillway infrastructure to facilitate access and placement of the spillway infrastructure. A tree survey will be undertaken prior to construction and any trees removed will be mitigated as per DCO Requirement 12 as part of the Habitat Management Plan (HMP). The spillway infrastructure will be micro sited to avoid any trees of note or root protection areas where trees can be retained. Extensive ecological surveys have been undertaken for the last four years and the conclusions of these surveys and the assessment contained with the ES and Habitats Regulations Assessment has been accepted and approved by NRW. The mitigation required to be implemented to ensure no significant effects is summarised within ES Chapter 18 Schedule of Mitigation.

The design of the pumping station has been in full consultation with NRW which includes placing the outfall pipe above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will identify the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station.

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents, which are currently being determined by NRW.

The Applicant is not connected or associated in any way to the project in Beddgelert however we wish to point out that the penstock for the Development will be underground and will not be seen between the two reservoirs.

Potential effects to the local economy in terms of short and long term employment from the Development are presented in ES Chapter 15. The Applicant, where possible, will promote the use of local contractors and knowledge given the extensive hydro power and slate mining experience locally.

36 Ray Wood

Response Received

I am concerned about the issue of noise once the scheme is running, particularly as I understand it, low frequency noise (difficult to assess). The problem can be proved to exist as it is an issue with Dinorwig Power Station. Residents - myself included as I've previously lived there - can attest to this. It's known locally as the 'Dinorwig hum'. Operators should not be allowed the powers of avoiding nuisance claims if they themselves cannot show they have made assessments and advised of the effects beforehand.

I have further concerns with its landscape impact adjoining Snowdonia National Park and being so clearly visible from the nearby hills such as the adjacent Moel Eilio. The Park has just been awarded dark sky status which would be affected by any security lighting etc.

As a precautionary principle nothing should be given planning that could potentially affect the good water quality of Llyn Padarn - recently given bathing water status - the only inland water to do so in Wales. Discharging from SPH into the lake has many unknowns.

No in-depth environmental study of flora and fauna was conducted, the report submitted to Gwynedd Council was incomplete, inaccurate, and missed protected species.

Snowdonia Pumped Hydro's Response

The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained within the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately 70m beneath ground level. DCO Requirement 7 requires an operational noise assessment to be undertaken once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped ‘Procedure for the assessment of low frequency noise complaints NANR45’ (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as necessary following this assessment.

A zone of theoretical visibility (ZTV) has been prepared and is included in Figure 6.3 of the ES. This identifies the viewpoints within the National Park, namely VP1, VP2 and VP12. The viewpoint from Moel Eilio is VP2 and this is shown on ES Figure 6.4b where the dam will be faced in slate and be contoured so that it mimics the existing and slate mounds. Any reinstatement and landscaping will be subject to a Landscape and Reinstatement Plan which is required to be submitted and agreed in writing with Gwynedd Council, possibly in consultation with SNPA. The conclusions of the landscape assessment combined with the DCO Requirement for a Landscape and Reinstatement Plan (Requirement 6), have been accepted by Gwynedd Council, NRW, CADW and SNPA.

Any security lighting will be subject to the approval of Gwynedd Council as per DCO Requirement 19 which will have due consideration of the Dark Sky Reserve.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

Extensive ecological surveys have been completed over the last four years and ES Chapter 7 and ES Appendix 7.1 to 7.21 provides these survey results on terrestrial and aquatic flora and fauna, protected species. A Habitats Regulations Assessment in relation to potential effects on Natura 2000 sites / designated sites has also been undertaken and is contained within document 5.04 No Significant Effects Report. Mitigation is summarised in ES Chapter 18 for the various species and habitats present on site.

Requirement 6 requires submission and approval of a CoCP. The CoCP requires a number of other plans to be produced as part of this overall plan, these include a Pollution Prevention Plan (PPP), Habitat Management Plan (HMP) and a Water Management Plan (WTMP). In addition Requirement 7 requires submission and approval of a bio-security plan and light spill will be controlled through Requirement 19. The conclusions of ES Chapter 7 and the HRA that the Development will have no significant effects subject to the implementation of the mitigation outlined have been accepted by NRW and Gwynedd Council.

37 Elfyn Jones on behalf of the British Mountaineering Council

Response Received

The British Mountaineering Council (The BMC) is the national representative body for climbers, hill-walkers and mountaineers for England & Wales. The organisation currently has just over 80,000 members, over 200 affiliated climbing clubs with over 5,000 members based in Wales.

The BMC's Welsh Area members have requested that I object to elements of this proposal on several matters, namely :_

- 1) The land on which this proposal is located is registered common land with consequent right of access for informal recreation under the Countryside & Rights of Way Act 2000. The proposal includes plans to deregister part of this - both the BMC and our members feel strongly that the land being offered in exchange (a felled conifer woodland partially sited on old slate waste heaps) is grossly sub-standard for the purposes of recreation and is a very poor substitute for the high quality open moorland and heath that is being lost on a popular and accessible common.
- 2) The closure (both temporary and permanent) of open access land and well used public rights of way in such a popular upland location close to the highly popular tourist town of Llanberis and right on the edge of a national park is unacceptable for a development of this kind.
- 3) There are numerous subjective and untested assumptions in the access element of the developers submissions - for instance

no mention is made of the fact that the old slate quarries are of tremendous historical and active interest to rock -climbers. The old slate quarries at Glynrhonwy are thought to be the first location world wide where its believed climbers first started climbing on slate - a particularly specialised but extremely popular genre of rock climbing that is unlike any other form of climbing.

4) It is the opinion of our members that the landscape impact of this development, on landscapes that are recognised in the developers own submission as being of "outstanding" or having "high" landscape value (and in particular the visual impact of the development from nearby Moel Eilio and Snowdonia National Park), has been underestimated and that the actual impact will be considerable and will negatively detract from a cultural, historic and natural landscape of national significance.

5) Finally - although not part of this application there is considerable concern that should the development proceed that there is no guarantee that the export of electricity generated at the site would not require new intrusive overhead cabling and power lines across the entrance to the iconic Llanberis valley. It is the opinion of our members that to give sufficient and accurate consideration to the impact of this development as a whole that the means by which electricity is exported should be part of this application.

Elfyn Jones on behalf of the British Mountaineering Council.

Snowdonia Pumped Hydro's Response

The Applicant's response to the relevant representation is provided below using the same notation as provided for ease of reference:

1. The Applicant proposes to deregister some of the land and provide a replacement, an application is currently being prepared and will be in accordance with the Common, Access Land and PRow Strategy (document reference 4.04). The area of common to be deregistered includes the currently fenced quarry void which is not open for public recreation for health and safety reasons. The replacement land being offered for the Common land to be deregistered is open moorland and pasture land not

forestry. The permanent net impact on the common will be an increase in the size of the common of 8 acres. The forestry land is offered in mitigation or the consequential impact on open access land of the provision of the replacement land which is already open access land. The replacement land will remain open to public access and is not lost. The forestry land is to provide in mitigation not a replacement and adds over 64 acres to the publically accessible land in the vicinity as well providing a link between currently designated areas and increasing the variety of publically accessible land. The suitability of the replacement land and the proposed mitigation will be considered through the commons application process.

2. To ensure safety of the recreational users during the construction and decommissioning works, temporary closures and diversions of PRoWs, permissive routes and CROW Land will be implemented. The Applicant has included provision within the DCO for both temporary and permanent closures and diversions of PRoW (as set out in Schedules 2, 3 and 4 and shown on the Access plan). The Environmental Liaison Officer will be responsible for notifying all interested parties (including recreational bodies) and local community of when such works will be undertaken, especially PRoWs and permissive routes which are used recreationally especially for organised walks or competitions. This will include any temporary closures of routes or diversions due to construction activities such as blasting or drilling when the consideration of safety is paramount. For access to Cefn Du, a temporary replacement car park has been identified (as shown on ES Figure 4.1 Development Overview) and will be implemented as a like for like replacement during the construction phase at Q1. Once Q1 is operational, the car park will be reinstated at the base of the new reservoir dam.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction

works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain times of the construction phase, may be reduced, however this will be kept to an absolute minimum. The safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

3. The Development uses the Charwel Fawr and Glyn Rhonwy quarries – it is not proposed to utilise any other quarry within this system and during the construction phase these quarries will not be fenced off as they are not part of the Development.

With regard to climbing, the Applicant is aware of the entire quarry system being used for climbers. Only two quarries are to be utilised by the Development (Q1 and Q6), however the remaining quarries are within the ownership of Gwynedd Council and therefore are private land. Access into Q6 has been regularly vandalised and the fencing around the other quarries is in the process of being repaired and made more robust to reduce unauthorised access. There will be suitable fencing around the Development during construction but there will be no changes to fencing around the remaining quarries as they are not part of the Development. The climbing community will be notified when blasting will be undertaken in Q1 and Q6. However, as these remaining quarries are not the responsibility of the Applicant, we cannot comment on the potential effects of unauthorised access on private land.

4. A zone of theoretical visibility (ZTV) has been prepared and is included in ES Figure 6.3. This identifies the viewpoints within the National Park, namely VP1, VP2 and VP12 and these are shown on ES Figures 6.4a, 6.4b and 6.4l. The dam will be faced in slate and be contoured so that it mimics the existing and slate mounds. Any reinstatement and landscaping will be subject to a Landscape and Reinstatement Plan (Requirement 6) which is required to be submitted and agreed in writing with Gwynedd Council, possibly in consultation with SNPA. The conclusions of the landscape assessment combined with the DCO Requirement

for a Landscape and Reinstatement Plan, have been accepted by Gwynedd Council, NRW, CADW and SNPA.

5. The Applicant has accepted a Connection Offer from SP Manweb and is evaluating options for the connection to the Pentir substation. Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales, 'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in Chapter 17 of the ES.

38 Michael Vitkovitch

Response Received

I wish to make representation regarding the deficiency in the submission on the effects of noise created by the generators of the proposed development. The comments to my Consultation question have stated that it is not possible to assess this noise until after completion. However Dinorwic Power Station across the valley has a known history of turbine noise affecting properties, and apparently pay compensation as a result. I am concerned that the Powers requested under the Development Order allow the Company protection against nuisance caused by the operation of the station, thus avoiding the issue completely. The construction will be by drill and blast as TBMs cannot operate economically in the rock conditions and short tunnel length. No assessment has been carried out of noise and vibration, something that is easily done as even the quantity of explosives is easily calculated.

I am a retired Chartered Civil Engineer with 6 years experience of tunnelling at Dinorwic and 6 ears tunneling experience elsewhere in the major A55 rock tunnels.

The application documentation is sadly incomplete and inaccurate.

Snowdonia Pumped Hydro's Response

An assessment of noise and vibration has been carried out and is presented in ES Chapter 13, which includes all sources of potential noise from the Development and related impacts to human health, including low frequency noise. Mitigation has been

proposed to limit the impacts on receptors as outlined in ES Chapter 18 Schedule of Mitigation and outlines that a Construction Noise Management Plan is a Requirement of the DCO (Schedule 1, Requirement 6) as part of the Code of Construction Practice this is to be approved by Gwynedd Council in consultation with NRW prior to the Commencement of Construction.. In addition the Applicant will set up a Liaison group to keep the local community informed of planned construction activities, timings and durations. they will also provide lines of communication where complaints can be dealt with. An operational noise management plan is required by Requirements 7 and 11 for the operation of the development which will include operational noise limits . The Applicant has also provided a Statement in Respect of Statutory Nuisance (Doc Ref 5.02).

The potential issue of low frequency noise (LFN) has been considered within the noise assessment contained with the ES – specifically Section 13.8.12 which provides information on methods and procedures for noise complaints and 13.8.13 which outlines how known component interactions have been recognised and can be mitigated. Therefore LFN will be considered throughout the detailed design for the Development and mitigated through design. Since the construction of Dinorwig, technology has improved and the regulation of low frequency noise has been implemented. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases including building design of both the underground turbine hall and above ground power house. The turbines themselves are located approximately 70m beneath ground level. DCO Requirement 7 requires an operational noise management plan which includes the undertaking of noise assessment once fully commissioned. If LFN effects are present at NSRs and Gwynedd Council receives complaints, an appropriately scoped ‘Procedure for the assessment of low frequency noise complaints NANR45’ (NANR45) assessment will be carried out with plant in situ to quantify the LFN effects from pumping and other operational processes. Further mitigation measures will be designed as necessary following this assessment.

39 British Horse Society

Response Received

I raised matters concerning the Rights of Way and status of the track as an UCR between Llanberis and Waunfawr which had been incorrectly shown on the Consultation documents . I see that some changes have been made and that the information now appears to be almost correct. The UCR is listed as a route that will have a temporary diversion in place BEFORE the original is closed. I need to be certain that fences, gates and the surface of any works associated with Bridleway or the UCR are carried out so as to be safe and suitable for horses and generally in accordance with Highway and BHS Standards. The documentation of the Application is silent in this respect.

Snowdonia Pumped Hydro's Response

To ensure safety of the recreational users during the construction and decommissioning works, temporary closures and diversions of PRowS, permissive routes and CROW Land will be implemented. The Applicant has included provision within the DCO for both temporary and permanent closures and diversions of PRow (as set out in Schedules 2, 3 and 4 and shown on the Access plan). Appropriate signage will be erected and information provided to inform members of the public. The Environmental Liaison Officer will be responsible for notifying all interested parties (including recreational bodies) and local community of when such works will be undertaken, especially PRowS and permissive routes which are used recreationally. This will include any temporary closures of

routes or diversions due to construction activities such as blasting or drilling when the consideration of safety is paramount.

40 Owain Rhys

Response Received
<p>Concernes on blasting</p> <p>Water contamination</p> <p>Hgv access</p> <p>Dangers of possible munitions</p>
Snowdonia Pumped Hydro's Response
<p>The Applicant's response to the relevant representation is set out below using the same order as provided for ease of reference:</p> <p>Blasting</p> <ul style="list-style-type: none">• We assume this point relates to the timings of blasting. The Environmental Liaison Officer will be responsible for notifying all interested parties (including recreational bodies) and local community of when such works will be undertaken well in advance. <p>Dewatering of Quarries</p> <ul style="list-style-type: none">• The quarries will have to be dewatered prior to the construction starting on them. Water sampling was undertaken to

inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination. Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock. Any dewatering will be undertaken under the discharge consent controlled by NRW – these applications have been submitted and are awaiting determination.

- A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (Appendix 9.1 and document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Management Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

HGV Access

- A draft Construction Traffic Management Plan has been produced to set out the measures which would be implemented to mitigate the impact of construction vehicle trips (HGVs) to and from the Development and the requirements made of the company or companies undertaking the works. This has been provided as Appendix 16.1.3

- The number of HGVs associated with construction traffic is likely to have an adverse, but temporary, effect on the local highway network and therefore, the programming of such movements will be subject to restricted periods of the day and working week.
- Improvements to the highway network will include upgrading Ffordd Cefn Du to a specification suitable for HGV vehicles, and agreed with the local Highway Authority. Along with widening the carriageway to a minimum of 4m from the cattle grid to the proposed dam site (to enable the safe passage of construction vehicles) additional space will also be provided for existing traffic that currently uses Ffordd Cefn Du to safely pass. Additional formal passing places will be incorporated at set intervals along Ffordd Cefn Du. These have been positioned at critical points along Ffordd Cefn Du to ensure forward visibility can be achieved, ensuring construction vehicles can pull in and give way to other road users. The existing informal drainage channels along the road will be upgraded to ensure surface run off will be dealt with, additional drainage provisions will be provided along the drainage channels to help slow down the rate of run off.
- At the cross roads in Waunfawr highway alterations are proposed to increase public safety and improve the visibility at the cross roads by introducing a contraflow for vehicles travelling north to south and vice versa; this is proposed to be achieved by pulling the eastern and western kerblines out. This will reduce the speeds along this section of road and provide areas of footway for the local residents to be able to safely cross the road.
- It is proposed that these improvements will be introduced prior to the enabling works being undertaken, therefore improvements will be in place during the other phases of construction.

Dangers of Possible Munitions

- It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The health and safety of the environment, local communities and the workforce is of paramount importance.
- The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.
- The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and other relevant consultees will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to ensure that any identified unexploded ordnance is dealt with appropriately.

41 Kate Lawrence

Response Received

I wholly oppose the Hydro scheme proposed at Glyn Rhonwy on the grounds that I am not satisfied that

- a) the scheme is necessary and beneficial to the local population, especially given the Dinorwig scheme
- b) there is far too much uncertainty over the damage the scheme could cause to the water quality in Lake Padarn. The lake is a major tourist attraction, it is enjoyed by locals as a swimming and water sports facility. The employment already provided in this industry could be at risk if the water quality were to be in jeopardy and I do not believe that the stated employment provided by the proposed scheme at Glyn Rhonwy would compensate for this.

Lake Padarn is a wonderful local resource in an already very industrial landscape; please don't spoil it for us.

Snowdonia Pumped Hydro's Response

The Applicant's response to the relevant representation is set out below using the same order as provided for ease of reference:

- a) The Dinorwig scheme is a separate scheme owned and operated by different developers than the Applicant. It is understood by the Applicant that and the Applicant cannot comment on the efficiency of that scheme . Dinorwig already runs at full capacity, and has recently completed an upgrade to expand its capacity.

b) The quarries will have to be dewatered prior to the construction starting on them. Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included the ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination. Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock. Any dewatering will be undertaken under the discharge consent controlled by NRW – these applications have been submitted and are awaiting determination.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Management Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

The Applicant recognises the importance of the lagoons to recreational activities and also the likely use of the lagoons all year round. The Applicant has already investigated moving the pumping station further away from the shoreline of Llyn Padarn and also placing the majority of the pumping station structure underground. In addition, the Applicant has committed to not undertaking any construction works on the pumping station or spillway infrastructure during the summer school holidays and that when construction works are ongoing near Llyn Padarn, the working area is reduced as much as possible, with equipment being transported back to the main compound at Q6 on the Industrial Estate. Access to the lagoons or car park area will not be prohibited but during certain

times of the construction phase, may be reduced, however this will be kept to an absolute minimum. However the safety of the users of Llyn Padarn and the construction workforce is of absolute priority and importance.

Disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway infrastructure is ready to be laid in Llyn Padarn, access will be limited for a short time to maintain health and safety but then reinstated shortly after. The Environmental Liaison group will ensure that interested parties, including recreational bodies, are kept informed of timings, location and duration of disruption.

The design of the pumping station has been in full consultation with NRW, which includes placing the outfall pipe above the thermocline at a depth of 5m to avoid potential impacts to the Arctic Charr and also to avoid any impacts to recreational activities. A marker buoy will identify the presence of the end of this pipe for navigational purposes. The construction of the pumping station and spillway will be tightly controlled by the DCO and also with compliance with the Water Management Plan as required by Requirement 6 of the DCO.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. As much access as possible, with due regard to health and safety, will be provided to the users of Llyn Padarn and the lagoons during construction. Lighting will be required during construction for Health and Safety reasons however no lighting or fencing is proposed during operation of the pumping station. External Lighting plans to be approved by Gwynedd Council in consultation with NRW prior to the commissioning of the Development (DCO Requirement 19).

The Development will be operated as a closed system meaning that there will be limited infrequent discharges of water from the

system into Llyn Padarn once operational. Any operational discharges will be controlled through the discharge consents which are currently being determined by NRW.

Potential effects to the local economy in terms of short and long term employment from the Development are presented in ES Chapter 15. The Applicant, where possible, will promote the use of local contractors and knowledge given the extensive hydro power and slate mining experience locally.

42 Gethin Jones

Response Received

I am deeply concerned by the presence of MOD ordnance in the bottom of two of the proposed reservoirs. The potential of seepage and subsequent contamination of the watershed needs further consideration and adequate removal/remediation prior to any further development of this site.

Snowdonia Pumped Hydro's Response

It has been identified that UXO may be present within Q6 as a result of its historic use. Chapter 8 of the ES outlines the potential effects of unexploded ordnance from the construction of the Development and ES Chapter 18 Schedule of Mitigation summarises that an Ordnance Management Strategy to be submitted to and approved by Gwynedd Council as part of DCO Requirement 7. The Development will be subject to a full geo-environmental and geo-technical site investigation prior to the main construction works. Should any unexpected contamination be identified, the Land Discovery Strategy required under DCO Requirements 7 and 13 will be implemented.

The health and safety of the environment, local communities and the workforce is of paramount importance. Further consultation with Gwynedd Council and other relevant consultees will be undertaken once the quarries are dewatered and the investigation works have begun. The Applicant will comply with the DCO Requirements and also any additional legislation and approvals to

ensure that any identified unexploded ordnance is dealt with appropriately.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past and current analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the EOD operation in the 1970s, and also supplementary testing which has been undertaken by the Applicant. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The development of the quarries provides for the removal of any such sources of contamination.

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present and mainly the presence of quarry waste rock.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) has been undertaken and are contained with the DCO application (ES Appendix 9.1 and Document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Management Plan (Requirement 7)) and any conditions imposed on the Applicant in terms of frequency of monitoring and suite of testing will be complied with as required by NRW.

43 Concerned About Glyn Rhonwy (CAGR)

43.1 Respondents

43.1.1 The following representations were received from a number of individuals and organisations and which repeat the same concerns. The Applicant has therefore provided a single response to the individual combining all concerns received.

Therefore this section provides a response to the representations submitted by the following individuals.

- Thomas Jones
- Derek Summers
- Siobhan Evans
- Lowri Roberts
- Garry Smith
- Dr Rebecca Williams
- Christopher Rowlnads
- Mererid Ilwyd
- Gruff
- Katie Lloyd
- Elin Williams
- Dr Dawn Wimpory
- Brad Nicholas
- Tania Scotland
- Emma Edwards-Jones
- Ms K S Potter
- Snowdonia Active
- Huw Llewelyn Jones
- Mark Lynden
-

43.2 Primary Concerns

Relevant Representation Topic – Regulation

Mitigation of environmental and other risks associated with the scheme will depend on effective monitoring and regulation. Assurance is sought that regulation and enforcement, particularly by Natural Resources Wales (NRW) will be effective. Why is a Development Consent Order is being sought before necessary discharge permissions are granted by NRW?

Snowdonia Pumped Hydro's Response

Mitigation measures, which will seek to avoid, reduce or remedy any potential adverse effects from the Development have been outlined in the various technical chapters within the ES, and are then summarised within Chapter 18 Schedule of Mitigation. This chapter outlines how the mitigation will be secured, which is predominantly through a specific DCO Requirement or through a separate consent or licence. Where these are secured via a DCO Requirement, the Applicant and their Principal Contractor is legally required to comply with all Requirements within the DCO, as approved by the Secretary of State. These Requirements will be discharged, in the same manner as planning permission conditions, through Gwynedd Council, who will liaise with NRW and other consultees as appropriate.

Where the mitigation is to be secured through an associated consent or licence, SPH and the Principal Contractor are also required to comply with any specific conditions set out in that consent or licence. An example of this is the discharge consents (secured through the Environmental Permitting Regulations 2010 (as amended)) which are required for the discharge (or dewatering) of the water contained within the quarries during construction. Discharge consents are also required for the infrequent operational discharges which may be required where there is excess water in the Development closed system. The Applicant has submitted "Details of Consents and Licences" as part of the DCO submission (Document 5.04) and an update to

this for each DCO Deadline through the Examination period (SPH_GREX_WE02_01). Interested parties will be able to view and comment on this through the PINS website after each Deadline has passed. Outside any relevant consent or licence, a schedule of mitigation will be provided by the Applicant which will set out the mitigation measures required to be secured and how these will be secured through either a power within the DCO or a management plan such as the CoCP. The schedule of mitigation will also be updated after each Deadline and will also be available on the PINS website for the Development.

The Applicant notes the requirement for assurance that these mitigation measures and any relevant conditions of consents and licences will be enforced. This is not for the Applicant to answer or comment on as both Gwynedd Council and NRW will be the competent authority for the discharge of the Requirements and the consents and licences.

It is standard practice to seek the required consents and licenses in parallel with the DCO application as the information required to inform all of these elements is largely the same and contained within the ES. The only difference being that the information is used to comply with the specific regulation and guidance required by that consenting regime.

The applications for discharge consent and a variation to the approved abstraction licence have been submitted in parallel to the DCO (as required by PINs Advice Note 11) and therefore SPH is in frequent dialogue with NRW. We will work with them to ensure that all the required consents and licences are secured appropriately. During the Examination, NRW will be required by the Examining Authority to confirm that there is no impediment to the required consents and licences being secured.

Relevant Representation Topic – Consultation

The Developer's consultation efforts have seemed more like a public relations exercise not a consultation with two way exchange of views. Elected representatives at local and national level have failed to engage with critics of the scheme. The consultation process has been inadequate.

Snowdonia Pumped Hydro's Response

The Consultation report (Document Ref 5.01) outlines all consultation undertaken by the Applicant, both statutory and non-statutory and outlines the bodies with whom the Applicant has consulted. This is required under Section 42 of the Planning Act 2008 and the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 and is a mandatory part of the DCO process. A Statement of Community Consultation (SoCC) was agreed with Gwynedd Council in December 2014 and published on 28 January 2015. A copy of the published SoCC was included in Appendix 4.7 to the submitted Consultation Report (Document Ref: 5.01). As required by the Planning Act 2008, the Applicant advertised the application widely prior to submission. Copies of the s48 notices as published are included in Table 2.2 of the Consultation Report (Document 5.01). The notice was published in:

- North Wales Daily Post (for two successive weeks) on 5th and 12th February 2015.
- Caernarfon Herald (for two successive weeks) on 5th and 12th February 2015.
- The Times on 5th February 2015
- The London Gazette on 5th February 2015

As part of the consultation process, a draft Environmental Statement or Preliminary Environmental Information Report was published in February 2015 and was available in the following locations and two public exhibitions were undertaken:

- On the Applicant's website: www.snowdoniapumpedhydro.com (in the "Document Library" section of that website).
- In hard copy from Thursday 12th February 2015 to Friday 13th March 2015 (inclusive) at the following inspection points:
 - Llanberis Library, Capel Coch Road, Llanberis, LL55 4SH
 - Llanberis Surgery, High Street, Llanberis, LL55 4SU,
 - Gwynedd Council Headquarters, Castle Street, Caernarfon, LL55 1S
 - Caernarfon Library, Pavilion Hill, Caernarfon, LL55 1AS
 - Waunfawr Surgery, Liverpool House, Waunfawr, LL55 4AG,
 - Deiniolen Library, Tŷ Elidir, High Street, Deiniolen, LL55 3HR
- At public exhibitions:
 - Canolfan Y Capel, Caeathro, LL55 2SS on Friday 27th February 2015 between 2pm and 8pm;
 - The Royal Victoria Hotel, Llanberis, LL55 4TY on Saturday 28th February between 10am and 7pm.

The consultation prompted a very high level of interest and the Applicant received over 650 responses which were duly considered and the Applicant's responses to these were published in the submitted consultation report. The Applicant has

followed national best practice in its approach to consultation and carried out the steps required by the Planning Act 2008, and agreed with the Gwynedd Council through the Statement of Community Consultation. In addition, it should be noted that this is, in effect, a second round of consultation following that which was undertaken for the approved scheme. The consultation associated with the DCO has been more extensive than that undertaken for the approved scheme. The Applicant agreed the extent, location and type of consultation for the DCO application with Gwynedd Council as part of the Statement of Community Consultation and the process was subject to mandatory advertisement in local and national newspapers. The evidence of this is provided in the submitted Consultation Report. The Applicant does not accept that the consultation has been inadequate. In response to the issues raised during the consultation, although no material changes to the Development design were required, modification to the scope of the Final ES did take place, including:

- Additional traffic count surveys;
- Updated water framework directive assessment including a new water balance model;
- Additional assessment for UXO;
- Updated landscape and visual assessment and photomontages;
- Additional noise monitoring survey and assessment;
- Additional ecology surveys including Phase 1 habitat, fish, invertebrates, bats and breeding birds; and
- Updated and additional mapping and topographical surveys including laser scan of the quarries and bathymetry surveys.

In addition, the pumping station was moved away from the shores of Llyn Padarn and an alternative location outside of the

lagoons area identified (both locations were assessed in the ES). The Applicant has also committed to minimise disruption to Llyn Padarn by not working on the pumping station during the school summer holidays.

Relevant Representation Topic – Munitions

Previously classified information has been released in the Developer's documentation about known and unknown ordnance remaining on site. A level of uncertainty about UXO, including chemical weapons has arisen which needs clarification in regard to risk to public health and safety and the environment.

Snowdonia Pumped Hydro's Response

The Applicant commissioned ZeticaUXO to prepare detailed information to support the DCO application. This is contained within the UXO Desk Study Report, 2015 (contained within ES Vol. 3H, Appendix 8.5 – Doc Ref: 6.03) and UXO Desk Study report for Cefn Du, 2015) (contained within ES Vol. 3H, Appendix 8.6 Doc Ref: 6.03). The purpose of these reports was to provide an overview of the potential for UXO within the Order Limits. This detailed assessment has identified the potential for Unexploded Ordnance (UXO) containing high explosives or pyrotechnic materials to remain onsite. ZeticaUXO made requests for the release of relevant records in order to provide suitable levels of confidence for any risk assessment. The information provided corroborative evidence which, alongside ZeticaUXO's experience, provides for high confidence of understanding and due regard for those UXO hazards that could reasonably be expected. With respect to chemical weapons, corroborative evidence (verified by several sources – please see Appendix 2.13 of ExA First Written Questions) has identified that the site was used as a transit-stop for Tabun-filled munitions on their way for disposal via RAF Llandwrog. There is a clear recorded chain of

custody for this. A past board of inquiry (responding to similar queries raised here) concluded that there was no evidence that these munitions were disposed of within the quarry pits at RAF Llanberis. Additionally, during the extensive Explosive Ordnance Disposal (EOD operation in the 1970s, no chemical munitions are recorded as having been found and there is no evidence of any exposure to chemical weapons for EOD personnel.

Requirement 7 of the DCO requires production and approval of an Ordnance Management Plan prior to commencement to manage the potential for UXO and its safe remediation if found. Requirement 7 also requires a Land Discovery Strategy to be produced and approved prior to commencement of construction to manage the potential for contamination of land and groundwater that could pose a risk to public health including its remediation if found. The Applicant wishes to state that the health and safety of not just the local community but the construction workforce is of utmost priority and paramount importance. These measures have been put into place to ensure that any UXO which is identified is disposed of in a responsible manner. As a further mitigation measure, the Applicant has considered including appropriate facilities within the DCO to deal with such ordnance onsite should this be required.

Relevant Representation Topic – Water Monitoring

Large volumes of water will be discharged from the quarries in both constructional and operational phases and could carry harmful chemicals. This could have a profound effect on downstream water catchment areas. Proposals for monitoring and controlling this discharge are inadequate.

Snowdonia Pumped Hydro's Response

It is estimated that there is 500m³ of water in Q1 and approximately 100,000 m³ of water in Q6 (this is a worst case assumption based on an estimate of 50,000 m³ of water in the standing water column and a further 50,000 m³ in the voids of the slate waste believed to reside in the bottom.

Water sampling was undertaken to inform the Water Resources assessment in 2012 and repeated in 2015. On both occasions, a sampling protocol outlining the methods, frequency and testing suite were agreed with NRW in advance. The 2015 sampling round also included ground water monitoring taken as part of the preliminary site investigation and supplemented the water and sediment sampling undertaken within the existing water bodies of the quarries. The laboratory results show that there was no evidence of contamination in either the water in the two quarries or in the surrounding groundwater from historical uses. There is no evidence whatsoever that Q1 was used for the disposal or decommissioning of munitions. However, the water quality in Q1 and Q6 is very similar and is consistent with the absence of any soluble contamination from past activities in Q6.

In general, compounds such as high explosives are insoluble and relatively immobile in water. As such, any contamination derived from UXO is more likely to be reflected in more conventional analysis such as that for metalloids (antimony, copper, lead, arsenic etc.). Past analysis of water within the quarries has not shown significant elevated levels of such contamination. This includes the testing undertaken during the 1970s as a result of the known presence of pyrotechnic devices. It should be noted that there was considerable disturbance of the quarry pits during the Explosive Ordnance Disposal (EOD) operation in the 1970s. There is no evidence to indicate that this led to contaminated water filtering into Llyn Padarn. The Development will remediate any UXO found as part of the Ordnance Management Strategy

Sediment sampling was attempted at 20 different locations within Q6 and multiple times in Q1 but no discernible sample was obtainable due to a lack of sediment being present. The floor of both quarries contains slate waste and boulders.

A Water Framework Directive (WFD) and Habitats Regulations Assessment (HRA) have been undertaken and are contained with the DCO application (Appendix 9.1 to the ES and document 5.04 respectively). These have concluded that both the construction and operational discharges will not impact any downstream or designated sites from discharge of water from the Development. This combined with the mitigation measures outlined in the DCO (such as the Water Management Plan (Requirement 6), Excess Water Management Strategy (Requirement 20) and Biosecurity Plan (Requirement 7)) and any conditions imposed on the Applicant's construction and operational discharge consents, in terms of frequency of monitoring and suite of testing, will be complied with as required by NRW.

Relevant Representation Topic – Grid Connections

The Developer gives assurances that the connection to the national grid will be underground, but there is no legal obligation. Financial and technical considerations could result in pylons being used. There should be a legal obligation to make the connection underground.

Snowdonia Pumped Hydro's Response

As outlined in the Grid Connection Statement (Document reference 7.01), the Applicant has now accepted a Connection Offer from SP Manweb and is now evaluating options for the connection to the Pentir substation. This may include the appointment of an Independent Connection Provider (ICP) to design and undertake the connection works. Any electrical connection works associated with an application for a DCO are classed as 'Associated Development'. In Wales, 'Associated Development' cannot be included within the Order Limits of the DCO and will undergo, if required, its own consenting process. The Applicant has

made a firm commitment to ensure that the connection will be underground and this has been the basis of the cumulative assessment undertaken in Chapter 17 of the ES (Document Ref: 6.02).

Relevant Representation Topic – Recreational

Llanberis area is very popular for outdoor recreation, including fishing and watersports for local people and visitors. Any degradation of the environment arising from this scheme, particularly water quality for swimming or fishing, could have a negative effect on this important part of the local economy.

Snowdonia Pumped Hydro's Response

The Applicant fully recognises the importance of Llyn Padarn and the lagoons. Therefore disruption to the lagoons area will be kept to a minimum during the construction of the pumping station and spillway infrastructure. Swimming will be unaffected during the onshore works but once the spillway is ready to be laid in Llyn Padarn, access to a very contained and localised area will be limited for a short time to maintain health and safety but then reinstated shortly after. It is of utmost importance to the Applicant that safety is maintained at all times for the users of Llyn Padarn, its wildlife and also the construction workforce.

Since the statutory consultation event in February 2015, the Applicant has investigated alternative locations for the pumping station and has moved the pumping station further back from the shoreline of Llyn Padarn than was originally proposed. In addition, the Applicant has incorporated concerns about the visual nature of the pumping station into its design. Therefore the pumping station is predominantly underground which then facilitates placing the outfall pipe at a depth of 5m (below minimum recorded water level (between 2008-2014) to avoid potential impacts to the Arctic Charr. This has been agreed since 2013 with

NRW (previously Countryside Council for Wales) and at that depth will also avoid any impacts to recreational activities. A marker buoy will mark the presence of the end of this pipe for navigational purposes. The Applicant has outlined two potential methods for construction of the pumping station and spillway infrastructure and these will be strictly controlled under the measures outlined in the Code of Construction Practice (CoCP) (DCO Requirements 6 and 8). The Water Management Plan specifically outlines the mitigation measures which relate to working adjacent to and within Llyn Padarn (e.g. provision of a silt curtain around works in Llyn Padarn). Once the method of construction is confirmed, this plan will be completed by the Principal Contractor and approved by Gwynedd Council as part of Requirement 6. The Environmental Liaison Group will ensure that interested parties are kept informed of timings, location and duration of disruption once the construction programme is confirmed. In addition, the Applicant has committed to avoiding the key summer school holiday season and access to the lagoons during construction will not be impeded unless there is a health and safety issue to users or workforce.

Once complete, the area will be reinstated and there will be no loss to recreational activities with the majority of the pumping station being below ground level, the only above ground structure is the control box and entry man hole. Lighting and fencing will be required during construction for security reasons however no permanent lighting or fencing is proposed during operation of the pumping station.

43.3 Secondary Concerns

Relevant Representation Topic – Access

Some recreational users of the area around the site have indicated that the “land swap” being offered as part of this scheme is not a satisfactory arrangement.

Snowdonia Pumped Hydro’s Response

This is subject to the Common Land Application being sought in parallel to the DCO. SPH are actively engaging with recreational users (including the competitions which use Llyn Padarn and Ffordd Cefn Du), graziers and other key stakeholders to develop the common land application. The proposals as they stand will result in a permanent increase in both the area of common land available for grazing and public access, as well as a permanent increase in land designated as access land under the Countryside and Rights of Way Act. Access over Cefn Du will be maintained during and after construction, and the proposals will have the effect of creating a permanent link of open access land between Cefn Du and Moel Eilio.

Relevant Representation Topic – Employment

The Developer’s documentation suggests 78 -118 local jobs during construction and possibly as few as 20 operational jobs may result from the scheme. This is at odds with larger numbers being circulated during local PR campaigns.

Snowdonia Pumped Hydro’s Response

Chapter 15 in the ES (Doc Ref: 6.02) outlines that up to an average of 100 people could be employed on site during construction

with a peak of up to 250 employees to enable the establishment of the reservoirs. In operation, there will be the creation of 25-35 permanent jobs.

The figure quoted in the relevant representation is taken from the ES for the approved scheme, the assessment has since been updated with the figures presented within Chapter 15 of the submitted ES (Doc Ref: 6.02) and as stated above.

Relevant Representation Topic – Noise

During construction: Blasting rather than tunnelling may be necessary, and a continuous conveyor may be used to move excess material uphill. The impact of this noise has not been adequately addressed. During operation: The potential negative impact on human health of long term exposure to low frequency noise/vibration has not been adequately addressed.

Snowdonia Pumped Hydro's Response

An assessment of noise and vibration has been carried out and is presented in Chapter 13 of the ES (Doc Ref: 6.02). This includes noise from all potential sources including blasting and the conveyor used to transport material between Q6 to Q1. This conveyor is to be placed within the penstock which is located between 50m and 90m below ground level. There are no above ground conveyors, other than those which may transport material from inside the quarries to the construction compounds on excess slate mounds. The noise chapter outlines mitigation measures which are summarised in ES Chapter 18 Schedule of Mitigation (Doc Ref: 6.02). These mitigation measures during construction will be secured through the Noise Management Plan (NMP) as required by DCO Requirements 6 and 11. This NMP is part of the CoCP which is to be approved by Gwynedd Council prior to the commencement of construction. In addition, the Environmental Liaison Group will be used to keep the local

community informed of planned construction activities, timings and durations, including blasting. They will also provide lines of communication where complaints can be dealt with.

It should be noted that the construction noise assessment in the ES (Doc Ref: 6.02) is provided to give an indication of potential effects based on a worst case scenario and the likely plant and equipment to be used. Once the Principal Contractor has been appointed, and a programme of construction methods and equipment are confirmed, the Principal Contractor will a Requirement 6) and if required, undertake any additional detailed assessments to identify where there may be additional potential noise and/or vibration effects and ensure appropriate mitigation measures are in place.

In relation to low frequency noise, this has been discussed in Chapter 13 of the ES Doc Ref: 6.02). Specifically with regard to low frequency noise (LFN), BS4142:2014 makes reference to the University of Salford 'Procedure for the assessment of low frequency noise complaints - NANR45' (2005) for the assessment of LFN.

A method to determine if there is a significant element of LFN as stated in NANR 45 is to compare the A-weighted noise levels (dB(A)) and the C-weighted noise levels (dB(C)) for each item of plant. If the difference between dB(A) and dB(C) is greater than 20 dB, it is considered to represent an indication of low frequency noise and appropriate mitigation will be required to minimise the effects LFN. It should be noted that the (dBC - dBA) noise level difference cannot be used as an annoyance predictor, yet is a simple indicator as to whether further investigations of LFN may be necessary). As the details of all the plant to be installed is not finalised, a further assessment will be carried out by the Operator and requirements for mitigation measures and noise control will be determined as the detailed design is developed. Careful selection of equipment, use of mitigation measures such as vibration isolation, mufflers, attenuators, etc. will be considered during the design phases.

The Applicant has recognised that some nuisance effects may be experienced by nearby receptors during construction and

these are outlined in the Statement of Statutory Nuisance (Doc. Ref: 5.02) including the procedure for complaints.

Relevant Representation Topic – Procedural

The Developers have gone about the promotion of this scheme in a piecemeal fashion. Fortuitous preparation of the lower site by Gwynedd Council, then application for Planning Permission to this same body then this application to the UKPI for a larger scheme, and applying for this DCO without a water discharge consent from NRW seems disingenuous.

Snowdonia Pumped Hydro's Response

The 49.9MW scheme granted under the Town & Country Planning Act 1990 was approved prior to the Electrical Market Reform (EMR). The EMR has changed the economics of pumped storage. This is the reason why approval for the increased capacity of the Development is now being sought. In addition, the new approval will enable the Development to be more useful to grid balancing, reduce UK renewable curtailment and reduce the carbon payback period.

The lower site is assumed to reference the Glyn Rhonwy Industrial Estate and this was developed in the 1990s by the former Welsh Development Agency (WDA). The Industrial Estate was earmarked by Gwynedd Council for economic development and the purpose of its preparation was to encourage enterprise. The development by the WDA and allocation by Gwynedd Council predates the Applicant's involvement and is not connected in any way. Nonetheless, the existing nature of the platforms and the allocation are reasons why Glyn Rhonwy Industrial Estate Platform was chosen as a suitable location for the turbine house and Development overall.

It is likely that the extant permission will be superseded by the DCO. Gwynedd Council are a statutory consultee in the DCO

process and the extant planning permission conditions have been incorporated into the DCO Requirements. Please see above response regarding the application of other consents and licences and how this is standard practice to seek these in parallel to the DCO.

Relevant Representation Topic – Consideration of Alternatives

The Environmental Statement does not adequately consider the alternative of doing nothing, or of simply enlarging the similar but much larger scheme just across the valley at Dinorwig with far less risk to the local environment.

Snowdonia Pumped Hydro's Response

Energy Storage is recognised by DECC and the National Infrastructure Commission, as well as academic and industry commentators including Imperial College London and The Carbon Trust, to be an important part of the future of a low carbon economy. Pumped Storage is a mature technology used worldwide and is recognised as the lowest cost and most durable form of energy storage. The Applicant carried out a review of all the possible sites in the UK for potential pumped storage schemes, and concluded that Glyn Rhonwy is highly suitable for several reasons. These have been outlined in Chapter 3 Design Evolution and Alternatives of the ES (Doc Ref: 6.02).

The Dinorwig scheme is owned and operated by Engie and therefore is completely independent of the Development. Therefore the Applicant cannot comment on enlargements to this scheme as it is outwith their control.

Relevant Representation Topic – Construction Issues

The upper site will be accessed along a narrow country road. Some residents of Waunfawr area are concerned about disturbance they will suffer but feel their views were not adequately represented by the local Community Council at the time of a flawed consultation process.

Snowdonia Pumped Hydro's Response

A traffic assessment has been undertaken and is presented in Chapter 12 of the ES (Doc Ref: 6.02) and considers all receptors that could be impacted by the Development including pedestrians and equestrians. Consultation has been undertaken with the Highways department of Gwynedd Council regarding the traffic management that will be required at Waunfawr and any potential stopping up or abnormal loads which are required on the A4086 for equipment and plant deliveries to Q6. Mitigation is summarised in Chapter 18 Schedule of Mitigation in the ES (Doc Ref: 6.02) and summarises the mitigation measures which will be implemented through the Construction Traffic Management Plan (CTMP) to manage and mitigate any potential adverse effects on the village of Waunfawr. The Applicant has considered the views of the Waunfawr residents as part of the public exhibitions held in February 2015 and, combined with consultation with the Council, has committed to preparing a Construction Traffic Management Plan (as required by DCO Requirements 6 & 9) which will outline the mitigation that must be adhered to, such as restrictions on times of movements, dedicated points of access and egress from both Q1 and Q6, traffic management at the Waunfawr crossroads and speed limits. This will be prepared and must be approved by Gwynedd Council prior to the commencement of construction. The dedicated Environmental Liaison Officer will be the point of contact for all concerns and will also communicate traffic movements and the implementation of specific mitigation measures as appropriate.

The Applicant has also had due consideration of the highway improvements required to the access to Q1, known locally as Ffordd Cefn Du. The swept path analysis was presented at consultation within the Draft ES (or Preliminary Environmental Impact Report – included as Appendix 2.5 in Vol3D of the submitted ES – Doc. Ref: 6.03) and outlines the areas of improvement required. This is mainly above the cattle grid where drainage repairs, resurfacing, creation of passing places and stabilisation works are required. The section below the cattle grid to the junction with the A4085 will require resurfacing and drainage repairs. No passing places are required south of the cattle grid and the works will remain within the highway and verge, with the road remaining as a single carriageway.

The local residents of Waunfawr and Groeslon will be consulted on the proposed highway improvements, which in the proximity of the Waunfawr crossroads consist of minor widening works and potentially improvements to the crossroads configuration to improve visibility. Another safety measure that could be implemented is that there could be a change in priority to give priority for east – west movement towards the A4085 as opposed to the north – south orientation at present. These improvements will be permanent and subject to maintenance by the Applicant during construction, after which the responsibility will be adopted by Gwynedd Council. The improvement works will be undertaken on behalf of the Local Highways Authority under Section 278 and Section 38 agreements to a specification agreed with the Council.

Relevant Representation Topic – Flood Risk

Risks due to flooding are not considered adequately with regard to residents directly in the flowpath. They do not adequately address the possibility of catastrophic and sudden loss of containment for example due to large scale collapse of a quarry wall

into upper or lower ponds

Snowdonia Pumped Hydro's Response

A Flood Consequences Assessment (FCA) has been undertaken by the Applicant and presented in Chapter 10 of the ES (Doc Ref: 6.02). Chapter 18 of the ES (Doc Ref: 6.02) summarises the required mitigation and outlines that DCO Requirement 6 requires an Emergency Response and Flood Risk Management Plan (ERFRMP) to be submitted to and approved by Gwynedd Council in writing as part of the CoCP prior to the commencement of construction. The dams and reservoirs will be designed to comply with the Reservoirs Act 1975 and the Applicant has already been in consultation with NRW regarding this. As part of the design of the Development, a panel engineer has been part of the design team and as the Development moves into detailed design prior to construction, a review and approval by a registered Panel Engineer is mandatory under this Act, as are independent panel engineer inspections, regular safety checks and monitoring during the lifetime of the Development. Such monitoring features are to be engineered into the dam. The breach analysis is a confidential document which has been approved by NRW.