

Prosiect Maen Hir

Solar a Storio Ynni



Preliminary Environmental Information Report Volume III

Appendix 7-3: Great Crested Newt Report

Prosiect Maen Hir - August 2024

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lightsource bp



Environmental Impact Assessment Great Crested Newt Survey Report

August 2024

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1 Introduction

1.1 Background

- 1.1.1 Great crested newt *Triturus cristatus* (GCN) surveys were undertaken for the Maen Hir Project (hereafter referred to as the 'Project') to ascertain the status of GCN within the Solar PV Site and a 250 m buffer to determine any potential impacts on this species. Surveys were carried out on accessible waterbodies in spring and summer of 2023 and 2024.
- 1.1.2 The Project will comprise the installation of solar photovoltaic (PV) generating panels, associated infrastructure including, a battery energy storage system (BESS), Project substation, cables routes, site accesses – collectively referred to as the 'Preliminary Ecological Information Report (PEIR) Boundary'.
- 1.1.3 The Solar PV Site has been divided into three areas: 'Maen Hir North, Maen Hir Central, and Maen Hir South. Main Hir South is further split into 'Maen Hir South A' and 'Maen Hir South B'. These areas are collectively referred to as the 'Solar PV Site' and are the focus of this report. Beyond the Solar PV Site, associated infrastructure includes the Cable Route Corridor, Grid Connection Corridor and Highways Works Land. The alignment of routes and scope of works for associated infrastructure require refinement and will be updated as the Project evolves.
- 1.1.4 This Appendix details the approach and findings of the GCN surveys carried out on accessible waterbodies located within and up to 250 m from the PEIR Boundary. Surveys were carried out between April and June in 2023 and in 2024, inclusive, where access allowed. This Appendix will be updated following the results of the further surveys in 2025 to inform the Environmental Statement (ES).
- 1.1.5 Further information on the Project is provided in Chapters 1 – 5 in the Preliminary Environmental Information (PEI) Report Volume I.

1.2 Consultation

- 1.2.1 Natural Resources Wales (NRW) were consulted on 23 April 2024 with regards to the field survey approach for GCN. The importance of non-breeding ponds for GCN was highlighted and it was agreed that, in addition to good practice survey guidelines, two traditional (i.e. presence/absence) surveys would be completed

for ponds with negative environmental DNA (eDNA) results if they are located within a pond group with confirmed GCN (hereafter referred to as a 'positive cluster'), the rationale being that eDNA may not pick up non-breeding ponds for GCN, which still have value within the landscape.

- 1.2.2 An indicative 250 m buffer has been applied to any pond with confirmed or assumed GCN present (for example, from records) to form a Positive Pond Group (see Figure 7-3-1). These groups were then subject to professional judgement to scope in negative eDNA and low HSI ponds for further survey based on connectivity with the surrounding landscape. This is an iterative process, which will be adapted pending the 2025 results.

1.3 Scope

- 1.3.1 In this report, the following terminology is used to describe the geographic areas in which the survey work has been conducted:

- Desk Study Area (hereafter referred to as the 'Study Area'): This area was subject to the collection of background information, such as desk study records for GCN, to supplement the survey work findings. The Study Area comprises the PEIR Boundary plus a 2 km radius.
- GCN Survey Area (hereafter referred to as the 'Survey Area'): This area is the focus of the GCN survey work and is shown in Figure 7-3-1. The Survey Area includes land within and up to 250 m from the Solar PV Site for the purposes of the PEIR.

1.4 Survey Objectives

- 1.4.1 The objectives of the survey work and the subsequent report presented here are to:

- Review existing ecological data to identify any records of GCN within the Study Area;
- Identify the presence of potentially suitable waterbodies located within the Survey Area using Ordnance Survey (OS) MasterMap and aerial mapping;
- Undertake survey work to establish the presence/absence of GCN and, if present, an assessment of the population size;

- Record other incidental species of amphibians or aquatic mammals; and,
- Evaluate the survey results to determine the nature conservation value of the Survey Area for GCN, to provide baseline evidence to support the ES.

2 Legislation and Planning Policy

2.1 Relevant Legislation

- 2.1.1 The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'.
- 2.1.2 The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the Conservation of Habitats and Species Regulations 2017 (referred to as the 2017 Regulations) so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in Wales. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.
- 2.1.3 The decline in GCN conservation status across Europe has led to its listing on Annex IV ('European Protected Species') of the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, adopted in 1992. The Habitats Directive is transposed into English and Welsh Law through the Conservation of Habitats and Species Regulations 2017 (as amended) (henceforth referred to as the Habitats Regulations). Schedule 2 of the Habitats Regulations lists the European Protected Species of animals, including GCN.
- 2.1.4 The GCN, at all life stages (adults, sub-adults, larvae and eggs), is protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Ref. 7-3.1). This makes it an offence to:
- deliberately take (capture), injure or kill a GCN;
 - deliberately disturb a GCN in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
 - damage or destroy a breeding site or resting place of a GCN;

- possess or control any live or dead specimen or anything derived from a GCN; and,
- intentionally take or destroy the eggs of a GCN.

2.1.5 Where development works are at risk of causing one or more of the listed offences, a mitigation licence from NRW would need to be obtained to facilitate the works that would otherwise be illegal.

2.1.6 The GCN is given full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 7-3.2) through its inclusion on Schedule 5. The legislation makes it an offence to:

- intentionally or recklessly take (capture), injure or kill a GCN;
- intentionally or recklessly disturb a GCN;
- intentionally or recklessly damage or destroy, or obstruct access to, any structure or place which a GCN uses for shelter or protection or intentionally or recklessly disturb a GCN while it uses such a place; and,
- possess or advertise/sell/exchange a GCN (dead or alive) or any part of a GCN.

2.1.7 Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

2.2 Planning Policy

2.2.1 The National Planning Policy Framework (NPPF) (Ref. 7-3.3) sets out the Government's planning policies for Wales and how these are expected to be applied by Local Authorities within their Local Development Frameworks. Chapter 15 of the NPPF 'Conserving and enhancing the natural environment' sets out the requirements to consider biodiversity in planning decisions.

2.3 Local Planning Policy

2.3.1 The Anglesey and Gwynedd Joint Local Development Plan 2017 (Ref. 7-3.4) details several policies relating to ecology and nature conservation, these include:

- Strategic Policy PS 19: conserving and enhancing the natural environment;
- Policy AMG 4: coastal protection;
- Policy AMG 5: protection and enhancement of local biodiversity; and,
- Policy AMG 6: protecting sites of regional or local significance.

2.4 Local Biodiversity Action Plans (LBAP)

2.4.1 Ynys Mon Local Biodiversity Action Plan (Ref. 7-3.5) lists 23 Priority Species, including GCN. Furthermore, the LBAP lists 20 Priority Habitats, including, but not limited to, ponds, reedbeds, fens and lakes.

2.5 Species and Habitats of Principal Importance for the Conservation of Biodiversity

2.5.1 Section 7 of the Environment (Wales) Act 2016 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitats in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

2.5.2 The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitats included in any list published under this Section and encourage others to take such steps.

2.5.3 Part 1 of the Act, including Sections 6 and 7, came into force on 21 May, 2016.

3 Methods

3.1 Desk Study

3.1.1 A desk study was carried out to inform Chapter 07: Ecology of the PEI Report to review habitat and protected species records. In relation to GCN, the following resources were consulted:

- Internationally and nationally designated sites with GCN as their qualifying features up to 2 km from the PEIR Boundary using the Multi Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk);
- Evidence of granted GCN European Protected Species Mitigation Licences within 2 km of the PEIR Boundary using MAGIC;
- Locally designated sites and GCN records up to 2 km from the PEIR Boundary using data resourced from Cofnod Biodiversity Record Centre (CBReC); and,
- Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify potential waterbodies within the Survey Area. Although this method might not guarantee the identification of all waterbodies, it represents the best approach possible within the constraints of the available data.

3.2 Field Surveys

Presence of Waterbodies

3.2.1 A total of 169 waterbodies have been identified to date within the Survey Area through a combination of the desk study and field data obtained during the ongoing extended Phase 1 Habitat Survey, as detailed in Chapter 7: Ecology of the PEIR. This comprehensive approach has sought to capture the aquatic habitats within the Survey Area that could potentially support GCN.

3.2.2 A total of 21 waterbodies have been screened out during subsequent surveys due to a lack of suitable aquatic habitat for GCN.

3.2.3 Ponds recorded are mapped and labelled on Figure 7-3-1.

Habitat Suitability Index Assessment

3.2.4 Of the 148 scoped in waterbodies, 64 waterbodies were subject to Habitat Suitability Index (HSI) Assessments in 2023 with a further 29 surveyed in 2024.

The remaining 55 ponds will be surveyed in 2025, Ponds scoped out or with limitations which meant a HSI could not be recorded are discussed in Section 3.4.

3.2.5 Following the HSI Assessments, ponds scoring ≥ 0.43 were screened in for eDNA. The threshold of ≥ 0.43 was reduced from the standard 0.5 to acknowledge the importance of non-breeding and/or sub-optimal ponds for GCN.

3.2.6 The HSI assessment was devised to quantitatively assess the suitability of waterbodies to support GCN. The HSI for GCN was developed by Oldham *et al.* (Ref. 7-3.6) and is a numerical index between zero (indicating unsuitable habitat) and one (representing optimal habitat). The HSI incorporates ten suitability factors, all of which are thought to affect GCN. These factors are:

3.2.7 Geographical location (SI1). The UK is divided into three zones A, B and C which illustrate decreasing potential for GCN in regard to their geographical range. Anglesey is located within zone B; representing marginal suitability;

- Waterbody area (SI2). In general pond sizes between 500 m² and 750 m² are optimal for GCN;
- Waterbody drying per decade (SI3). The occasional drying of a waterbody (once per decade) is optimal as this reduces numbers of predatory fish. However permanent water retention is preferable to annual drying up;
- Water quality (SI4). Good water quality is optimal and is measured through invertebrate diversity and the condition of the waterbody;
- Shade cover (SI5). Represented as a percentage of the bank. Unshaded waterbodies are preferred to heavily shaded waterbodies;
- Waterfowl (SI6). Heavy use by waterfowl can deteriorate the suitability of a waterbody for GCN, although minor use e.g. by moorhen is likely to have a negligible impact;
- Fish (SI7). In general, greater numbers of fish result in a higher level of predation upon GCN eggs and larvae and thus fewer numbers of fish in a waterbody increases the potential viability of a GCN population;

3.2.8 Density of waterbodies within km² (SI8). The presence of waterbodies within the local area increases the chances of GCN becoming established from nearby waterbodies and the suitability of the local area to support a meta-population;

- Terrestrial habitat (SI9). A higher proportion of suitable terrestrial habitat located within 500 m of a breeding site (waterbody), increases the likelihood of GCN presence within a particular area; and,
- Macrophyte cover (SI10). The greater the proportion of the waterbody that is covered by aquatic vegetation, the opportunities for shelter and egg laying by GCN increases. Where macrophyte cover reaches 80% or above, the effect of a reduction in light and oxygen reaching the deeper water can adversely reduce the suitability of the waterbody for GCN.

3.2.9 The ten field scores are converted into suitability index scores which are multiplied together then calculated to the power of 0.1, to give a HSI score between 0 – 1.

3.2.10 HSI scores are categorised in terms of waterbody suitability for GCN as below:

- <0.43* = poor
- 0.43* – 0.59 = below average
- 0.60 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

* reduced from 0.5 to account for abundance of GCN in Anglesey.

3.2.11 The system is not sufficiently precise enough to conclude that any particular waterbody with a high score will support GCN or that a waterbody with a low score will not support GCN. However, it is a useful tool for establishing the potential suitability of waterbodies for breeding GCN to support further survey scoping.

Environmental DNA Survey

3.2.12 Of the 62 waterbodies within the Survey Area with HSI Assessment scores above the 0.43 threshold, not excluding those pending HSI assessments, 53 were subject to GCN environmental DNA (eDNA) testing by a surveyor holding a NRW

GCN licence and an assistant in 2023 and 2024. Six waterbodies were downgraded to below 0.43 due to deteriorated habitat conditions.

- 3.2.13 The remaining nine waterbodies could not be surveyed due to access being rescinded, unsuitable conditions for eDNA sampling, or changes to screening from updates to the Solar PV Site boundary. Where waterbodies were unsuitable for eDNA, presence/absence surveys were completed in their place.
- 3.2.14 Ponds scoped out or with limitations which meant eDNA was not sampled are discussed in Section 3.4.
- 3.2.15 eDNA survey is a relatively recently established technique approved by Defra and Natural England as an alternative technique to establish the presence/absence of the GCN within aquatic habitats.
- 3.2.16 In aquatic environments, eDNA is diluted and distributed in the water. Sources of eDNA in pond water derive from faeces, mucous, gametes, shed skin and carcasses. The eDNA survey involves the collection of water samples for laboratory analysis for the DNA of species of interest, in this case GCN. The sampling procedure is described in the published method (Ref. 7-3.7) and requires that the water samples are taken between 15 April and 30 June.
- 3.2.17 The eDNA surveys were carried out in accordance with the published method (Ref. 7-3.7.) using sampling kits and analysis services provided by one of the approved eDNA suppliers (SureScreen Scientifics). eDNA sampling resulted in a result of either positive (GCN eDNA was detected in the water sample), negative (no GCN eDNA was detected in the sample and GCN are likely absent) or inconclusive (the sample was degraded or otherwise could not provide a positive or negative result).
- 3.2.18 Positive results indicate that GCN DNA is present within a waterbody, though does not give sufficient information to estimate population size. Negative results from eDNA surveys are typically accepted as evidence of likely absence of GCN from the waterbody in agreed, and further survey is not then typically required. However, as agreed with NRW, two presence/absence surveys were conducted of ponds with negative eDNA results that were in positive clusters.

3.2.19 Surveys were carried out between April and June in 2023 and in 2024, inclusive, where access allowed.

Ponds with Positive eDNA – Population Assessment Surveys

3.2.20 Where GCN were confirmed present by eDNA, six surveys were completed to determine a population assessment and a peak count of GCN, as outlined in the Great Crested Newt Conservation Handbook (Ref. 7-3.8). Each individual pond was surveyed within the same calendar year, with some ponds being surveyed in 2023 and some in 2024. The surveys included at least three separate survey techniques including bottle trapping, torch surveys, refugia searches and egg searches.

3.2.21 Population status was assigned based on the system in the GCN handbook published by Froglife (Ref. 7-3.9) and summarised in Table 7-3-1.

Table 7-3-1. Population Status Thresholds

Newt Species	Survey Method	Population Score		
		Low	Good	Exceptional
Great Crested Newt	Seen or netted (day)	<5	5 – 50	>50
	Torching	<10	10 – 100	>100
Smooth Newt <i>Lissotriton vulgaris</i> and Palmate Newt <i>Lissotriton helveticus</i>	Netted (day)/torching	<10	10 – 100	>100

Pond with Negative eDNA - Presence/Absence Surveys

3.2.22 Waterbodies with negative eDNA results, but in a positive cluster were subject to two presence/absence surveys to determine whether GCN may be using them in lower numbers. If GCN were subsequently found, the survey effort was increased to six, where time allowed within the survey season.

3.3 Limitations

3.3.1 Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically

mean that these still occur within the area of interest or are relevant in the context of the proposed development. Where any conclusions and recommendations contained in this report are based upon information provided by others, it has been assumed that all relevant information provided by those parties is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

- 3.3.2 The desk study search area was based on the PEIR Boundary included as part of the Project at the time of request. Due to ongoing design development the PEIR Boundary has undergone updates, including additional land for potential Highway Works, which have not been included within this reporting. As a result, some non-statutory designated sites and species records are located $>/<$ 2km from the PEIR Boundary. Figure 7-5 highlights current gaps between the requested 2 km desk study search area and the 2 km buffer of the updated PEIR boundary. These gaps only apply to data held by Cofnod, and an updated desk study will be undertaken and provided in the ES.
- 3.3.3 The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this report. The work described in this report was conducted between November 2022 and February 2024 and is based on the conditions encountered and the information available during said period. The scope of this report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the report, which may come or be brought to AECOM's attention after the date of the report.
- 3.3.4 Since the EIA Scoping Request (PEIR Volume III Appendix 2-1: EIA Scoping Request) was issued in November 2023, the design of the Project has evolved. The current PEIR boundary is presented in PEIR Volume II Figure 7-1: Project Overview. This has included the incorporation of Maen Hir South 'A' and several other minor boundary adjustments into the Project. Further ecology surveys, both within the Solar PV Site and the wider PEIR Boundary, will be undertaken within

the appropriate survey windows, where required, in 2025. Data from these surveys will inform the Ecology chapter for the ES that will accompany the Development Consent Order (DCO) application.

- 3.3.5 Field surveys to inform this PEIR have been undertaken within the Solar PV Site only, with no formal surveys undertaken to date within the proposed Cable Route Corridor, proposed Grid Connection Corridor, proposed Highway Works Land and proposed Construction Access routes, as their exact locations have not been finalised and are subject to refinement. As such, survey effort to date has focussed on land within the Solar PV Site. Surveys to validate and confirm the presence, or otherwise, of GCN within the wider areas will be undertaken in 2025, as required, once these additional areas have been confirmed. This information will be presented in the final ES and submitted as part of the DCO application.

4 Results

4.1 Desk Study

- 4.1.1 Cofnod returned 68 recent records for GCN within the Study Area, including 32 records within the Solar PV Site boundary, predominantly distributed in the North of the Site. Cofnod returned a further 97 recent records of other amphibians within the 2 km Study Area. These include 27 records of common toad *Bufo bufo*, 39 records of common frog *Rana temporaria*, 28 records of palmate newt, and three records of smooth newt. All species identified by the desk study were present within the Solar PV Site.
- 4.1.2 There were no designated nature conservation sites returned in the desk study designated for GCN within the Study Area.
- 4.1.3 There are 169 waterbodies (excluding running ditches) located within 250 m of the Solar PV Site, including 90 waterbodies within the Solar PV Site.

4.2 Field Surveys

- 4.2.1 The results of the HSI, and subsequent eDNA and manual surveys (including peak counts) for each pond are summarised in Annex I, Table 1. The results of the manual surveys including peak counts is summarised in Table 7-3-2.
- 4.2.2 A total of 15 waterbodies have been confirmed to have GCN: D002, D003, JH24P003, P016, P016A, P016B, P044, P049, P051, P052, P056, P092_093, P096, P149 and P150.
- 4.2.3 A further eight waterbodies are assumed to have GCN present based on positive eDNA results, including P014, P015, P017, P039, P053, P057, P091 and P0141.
- 4.2.4 One waterbody (D003), which returned a negative eDNA result later confirmed positive for GCN during the two presence/absence surveys completed from being within a positive pond group, with two female and one male GCN recorded.
- 4.2.5 The results from surveys of waterbodies screened into population surveys revealed a diverse presence of all three native newt species, with GCN populations present across the Project. GCN were observed in several life stages, including females, males, sub-adults, sub-adults and eggs with notable

concentrations in ponds P052 (Maen Hir Central 250 m buffer), P056 (Maen Hir north 250 m buffer) and P092_093 (Maen Hir South within Site Boundary).

- 4.2.6 Of the waterbodies subject to population assessments, six waterbodies received a 'Low' population score and six waterbodies received 'Good' population scores for GCN. No waterbodies surveyed obtained an 'Exceptional' population score for GCN, and one of the surveyed waterbodies where GCN eggs had been previously recorded (P039) subsequently did not record any GCN during the presence/absence surveys.
- 4.2.7 Please note, these are preliminary results and survey work is ongoing. As such, the above results are subject to change.

Other Amphibians

- 4.2.8 Palmate newt was most frequently recorded, with Good population scores (Ref. 7-3.6) in ponds D002, P016A, and P096 (see Table 7-3-2). Smooth newt was less commonly observed, with their presence only recorded within waterbodies D002 and P053. Other species such as frog and common toad were occasionally recorded in Low numbers.

Table 7-3-2. Preliminary Presence/Absence and Population Survey Results (Peak Count)

Pond Number	No. of Visits	GCN Female	GCN Male	GCN Eggs (inc. folds)	GCN Unknown	GCN Sub-adult	GCN Peak Count	Palmate Female	Palmate Male	Palmate Unknown	Smooth Female	Smooth Male	Smooth Unknown	Other*
D002	6	1	-	-	1	-	2	10	18	12	3	1	-	1T/1F
D003	6	2	2	-	-	-	4	6	1	3	-	-	-	3T
P014	4	-	-	-	-	-	-	1	1	-	-	-	-	1F
P015	4	-	-	-	-	-	-	-	-	-	-	-	-	-
P016	6	1	-	-	-	-	1	2	1	-	-	-	-	1F
P016A	6	2	5	-	-	-	7	9	10	-	-	-	-	-
P016B	6	1	-	-	-	-	1	1	1	-	-	-	-	1T
P017	4	-	-	-	-	-	-	1	-	-	-	-	-	1F
P039	6	-	-	-	-	-	-	3	2	-	-	-	-	-
P044	6	-	-	1	1	-	2	-	-	2	-	-	-	3F/1T
P049	6	-	-	-	18	-	18	-	-	6	-	-	-	-
P051	6	-	-	-	9	-	9	-	-	-	-	-	-	-
P052	6	3	6	-	-	-	9	-	-	-	-	-	-	1F
P053	4	-	-	-	-	-	-	-	-	3	-	-	1	-
P056	6	8	10	10	-	1	29	-	-	1	-	-	-	1F
P057	4	-	-	-	-	-	-	1	1	-	-	-	-	-
P089	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P091	5	-	-	-	-	-	-	-	-	2	-	-	-	-
P092_093	6	7	10	-	-	-	17	-	-	2	-	-	-	-
P094	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P096	5	7	4	1	-	-	12	-	-	23	-	-	-	-
P097	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P098	2	-	-	-	-	-	-	-	-	-	-	-	-	-

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Pond Number	No. of Visits	GCN Female	GCN Male	GCN Eggs (inc. folds)	GCN Unknown	GCN Sub-adult	GCN Peak Count	Palmate Female	Palmate Male	Palmate Unknown	Smooth Female	Smooth Male	Smooth Unknown	Other*
P119	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P120	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P125	2	-	-	-	-	-	-	-	-	-	-	-	-	-
P141	6	-	-	-	-	-	-	-	-	6	-	-	-	-

*T = Toad & F = Frog

5 Summary

- 5.1.1 GCN are confirmed present across the Survey Area, including Maen Hir North, Central and South B. To date there are no confirmed GCN with Maen Hir South A; however, this may be updated as surveys are ongoing. There is potential for negative impacts on individual GCN and GCN populations during construction, operation and decommissioning. These impacts will be assessed within the ES Chapter, along with requirements for avoidance and mitigation.

6 References

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- Ref. 7-3.8. Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.
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7 Annexes

7.1 Annex I – Field Survey Results

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
CG24P001	Within	Within	N/A	Maen Hir South A	Not within 250 m	0.42	N/A	N/A	N/A	Screened Out
D001	Within	Within	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D002	Within	Within	Yes	Maen Hir Central	Yes - Intersects	0.7	Positive	6	1 female	GCN Present
D003	Within	Within	Yes	Maen Hir Central	Yes - Intersects	0.66	Negative	6	2 female & 1 male	GCN Present
D004	Within	Within	Yes	Maen Hir Central	Within 150 m	Pending	Pending	Pending	Pending	Screened In
D005	Within 250 m	Within	No	Maen Hir Central	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D006	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D007	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
D008	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D009	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D010	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D011	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
D012	Within	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
JH24P001	Within	Within	No	Maen Hir South B	Not within 250 m	0.5	Negative	N/A	N/A	GCN Absent
JH24P002	Within	Within	No	Maen Hir North	Not within 250 m	0.47	Negative	N/A	N/A	GCN Absent
JH24P003	Within 50 m	Within	Yes	Maen Hir Central	Not within 250 m	0.58	Positive	Pending	Pending	GCN Present
P001	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P002	Within 150 m	Within 150 m	N/A	Maen Hir North	Not within 250 m	0.42	N/A	N/A	N/A	Screened Out
P003	Within 150 m	Within 150 m	N/A	Maen Hir North	Not within 250 m	0.39	N/A	N/A	N/A	Screened Out
P004	Within 150 m	Within 150 m	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P005	Within 250 m	Within 250 m	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P006	Within 50 m	Within 50 m	No	Maen Hir North	Not within 250 m	0.71	Negative	N/A	N/A	GCN Absent
P007	Within 100 m	Within 100 m	No	Maen Hir North	Not within 250 m	0.78	Negative	N/A	N/A	GCN Absent
P008	Within 50 m	Within 50 m	No	Maen Hir North	Not within 250 m	0.71	Pending	Pending	Pending	Screened In
P009	Within 150 m	Within 150 m	No	Maen Hir North	Not within 250 m	0.64	Pending	Pending	Pending	Screened In
P010	Within 150 m	Within 150 m	No	Maen Hir North	Not within 250 m	0.62	Negative	N/A	N/A	GCN Absent
P011	Within 50 m	Within 50 m	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P012	Within 50 m	Within 50 m	No	Maen Hir North	Not within 250 m	0.46	Negative	N/A	N/A	GCN Absent
P013	Within 200 m	Within 200 m	N/A	Maen Hir North	Not within 250 m	0.42	N/A	N/A	N/A	Screened Out
P014	Within	Within	Yes	Maen Hir North	Yes - Intersects	0.72	Negative	4	None	Assumed Present
P015	Within	Within	Yes	Maen Hir North	Within 50 m	0.7	Negative	4	None	Assumed Present
P016	Within	Within	Yes	Maen Hir North	Yes - Intersects	0.76	Positive	6	1 female	GCN Present
P016A	Within	Within	Yes	Maen Hir North	Yes - Intersects	Pending	Pending	6	2 female & 5 male	GCN Present
P016B	Within	Within	Yes	Maen Hir North	Yes - Intersects	Pending	Pending	6	1 female, eggs	GCN Present
P017	Within	Within	Yes	Maen Hir North	Yes - Intersects	0.6	Negative	4	N/A	Assumed Present
P018	Within	Within	Yes	Maen Hir North	Within 5 m	Unsuitable	N/A	N/A	N/A	Screened Out
P019	Within	Within	Yes	Maen Hir North	Within 150 m	0.44	Pending	Pending	Pending	Pending

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P020	Within	Within	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P021	Within	Within	N/A	Maen Hir North	Not within 250 m	0.37	N/A	N/A	N/A	Screened Out
P022	Within 50 m	Within 50 m	No	Maen Hir North	Not within 250 m	0.57	Negative	N/A	N/A	GCN Absent
P023	Within	Within	N/A	Maen Hir North	Not within 250 m	0.35	N/A	N/A	N/A	Screened Out
P024	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P025	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P026	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P027	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	0.34	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P028	Within	Within	N/A	Maen Hir North	Not within 250 m	0.37	N/A	N/A	N/A	Screened Out
P029	Within	Within	No	Maen Hir North	Not within 250 m	0.55	Negative	N/A	N/A	GCN Absent
P030	Within	Within	N/A	Maen Hir North	Not within 250 m	0.39	N/A	N/A	N/A	Screened Out
P031	Within 100 m	Within	No	Maen Hir North	Yes - Intersects	Pending	Pending	Pending	Pending	Screened In
P032	Outside 250 m Buffer	Within	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P033	Outside 250 m Buffer	Within 250 m	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P034	Within 150 m	Within 150 m	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P035	Within 250 m	Within 150 m	N/A	Maen Hir North	Not within 250 m	0.28	N/A	N/A	N/A	Screened Out
P036	Within 250 m	Within 50 m	No	Maen Hir Central	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P037	Within 50 m	Within 50 m	No	Maen Hir Central	Not within 250 m	Pending	Pending	Pending	Pending	Screened In

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P038	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.4	N/A	N/A	N/A	Screened Out
P039	Within 50 m	Within	Yes	Maen Hir Central	Not within 250 m	0.72	Positive	6	Eggs previously found	GCN Assumed Present
P040	Within 50 m	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P041	Within	Within	Yes	Maen Hir Central	Within 150 m	Unsuitable	N/A	N/A	N/A	Screened Out
P042	Within 50 m	Within	No	Maen Hir Central	Not within 250 m	0.43	Negative	N/A	N/A	GCN Absent
P043	Within 50 m	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P044	Within	Within	Yes	Maen Hir Central	Within 15 m	0.78	Pending	6	1 unknown GCN	GCN Present
P045	Within	Within	No	Maen Hir Central	Not within 250 m	0.47	Negative	N/A	N/A	GCN Absent
P046	Within 150 m	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P047	Within 150 m	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P048	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.34	N/A	N/A	N/A	Screened Out
P049	Within	Within	Yes	Maen Hir Central	Not within 250 m	0.82	Positive	6	18 individuals torching	GCN Present
P050	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.36	N/A	N/A	N/A	Screened Out
P051	Within 50 m	Within	Yes	Maen Hir Central	Not within 250 m	0.69	Pending	6	5 female & 2 male	GCN Present
P052	Within 100 m	Within	Yes	Maen Hir Central	Not within 250 m	0.67	Positive	6	3 female & 6 male	GCN Present
P053	Within 50 m	Within 50 m	Yes	Maen Hir Central	Not within 250 m	0.67	Positive	4	None	GCN Assumed Present
P054	Within 250 m	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P055	Within 250 m	Within 250 m	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P056	Within 50 m	Within 50 m	Yes	Maen Hir North	Yes - Intersects	0.64	Positive	6	8 female, 10 male & 1 sub-adult	GCN Present
P057	Within 100 m	Within 50 m	Yes	Maen Hir North	Yes - Intersects	0.57	Positive	4	None	GCN Assumed Present
P058	Within 250 m	Within 150 m	No	Maen Hir North	Within 30 m	Pending	Pending	Pending	Pending	Screened In
P059	Within	Within	N/A	Maen Hir North	Not within 250 m	0.38	N/A	N/A	N/A	Screened Out
P060	Within 50 m	Within	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P061	Within 200 m	Within	No	Maen Hir North	Within 5 m	Pending	Pending	Pending	Pending	Screened In
P062	Within 200 m	Within	No	Maen Hir North	Within 100 m	Pending	Pending	Pending	Pending	Screened In
P063_064	Within 50 m	Within	No	Maen Hir North	Within 5 m	0.66	Pending	Pending	Pending	Screened In
P065	Within 150 m	Within	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P066	Within 200 m	Within	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P067	Within 200 m	Within 200 m	No	Maen Hir Central	Yes - Intersects	Pending	Pending	Pending	Pending	Screened In
P068	Within 50 m	Within 50 m	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P069	Within 100 m	Within 100 m	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P070	Within 250 m	Within 250 m	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P071	Within 200 m	Within 200 m	No	Maen Hir Central	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P072	Within 250 m	Within 250 m	No	Maen Hir Central	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P073	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.33	N/A	N/A	N/A	Screened Out
P074	Outside 250 m Buffer	Within	N/A	Maen Hir Central	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P075	Outside 250 m Buffer	Within	N/A	Maen Hir Central	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P076	Within 50 m	Within	N/A	Maen Hir Central	Not within 250 m	0.39	N/A	N/A	N/A	Screened Out
P077	Outside 250 m Buffer	Within 100 m	N/A	Maen Hir South A	Not within 250 m	0.38	N/A	N/A	N/A	Screened Out
P078	Outside 250 m Buffer	Within	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P079	Within 100 m	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P080	Within 150 m	Within	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P081	Within 50 m	Within 50 m	N/A	Maen Hir South B	Not within 250 m	0.41	N/A	N/A	N/A	Screened Out
P082	Within 50 m	Within 50 m	No	Maen Hir South B	Not within 250 m	0.61	Negative	N/A	N/A	GCN Absent
P083	Within	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P084	Within 200 m	Within 200 m	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P085	Within 50 m	Within 50 m	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P086	Within 200 m	Within 100 m	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P087	Within	Within	N/A	Maen Hir South B	Not within 250 m	0.25	N/A	N/A	N/A	Screened Out
P088	Within 150 m	Within 150 m	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P089	Within 50 m	Within 50 m	No	Maen Hir South B	Not within 250 m	0.39	Negative	2	None	GCN Absent
P090	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.41	N/A	N/A	N/A	Screened Out
P091	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.52	Positive	5	None	GCN Assumed Present
P092_093	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.43	Pending	6	2 male	GCN Present
P094	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.38	Negative	2	None	GCN Absent
P095	Within	Within	N/A	Maen Hir South B	Not within 250 m	0.37	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P096	Within 50 m	Within 50 m	Yes	Maen Hir South B	Not within 250 m	0.61	Positive	5	12 individuals torching	GCN Present
P097	Within	Within	No	Maen Hir South B	Within 250 m	0.6	Negative	2	None	GCN Absent
P098	Within	Within	No	Maen Hir South B	Within 250 m	0.86	Negative	2	None	GCN Absent
P099	Within 50 m	Within 50 m	No	Maen Hir South B	Yes - Intersects	Pending	Pending	Pending	Pending	Screened In
P100	Within 100 m	Within 100 m	No	Maen Hir South B	Within 100 m	Pending	Pending	Pending	Pending	Screened In
P101	Within 200 m	Within 200 m	No	Maen Hir South B	Yes - Intersects	Pending	Pending	Pending	Pending	Screened In
P102	Within 100 m	Within 100 m	No	Maen Hir South B	Within 25 m	Pending	Pending	Pending	Pending	Screened In
P103	Within 150 m	Within 150 m	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P104	Within	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P105	Within 50 m	Within 50 m	No	Maen Hir South B	Not within 250 m	0.73	Negative	N/A	N/A	GCN Absent
P106	Within	Within	No	Maen Hir South B	Not within 250 m	0.52	Negative	N/A	N/A	GCN Absent
P107	Within	Within	N/A	Maen Hir South B	Not within 250 m	0.39	N/A	N/A	N/A	Screened Out
P108	Within	Within	No	Maen Hir South B	Not within 250 m	0.47	Negative	N/A	N/A	GCN Absent
P109	Within 150 m	Within 150 m	No	Maen Hir South B	Not within 250 m	0.58	Pending	Pending	Pending	Screened In
P110	Within 150 m	Within 150 m	No	Maen Hir South B	Not within 250 m	0.58	Pending	Pending	Pending	Screened In
P111	Within 250 m	Within 250 m	No	Maen Hir South B	Not within 250 m	0.6	Negative	N/A	N/A	GCN Absent
P112	Within 250 m	Within 250 m	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P113	Within 150 m	Within 150 m	No	Maen Hir South B	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P114	Within	Within	N/A	Maen Hir North	Not within 250 m	0.4	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P115	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P116	Within	Within	No	Maen Hir North	Not within 250 m	0.53	Negative	N/A	N/A	GCN Absent
P117	Within 50 m	Within 50 m	N/A	Maen Hir North	Not within 250 m	0.31	N/A	N/A	N/A	Screened Out
P118	Within	Within	N/A	Maen Hir South B	Not within 250 m	0.32	N/A	N/A	N/A	Screened Out
P119	Within	Within	Yes	Maen Hir North	Within 150 m	0.51	Negative	2	None	GCN Absent
P120	Within	Within	Yes	Maen Hir Central	Not within 250 m	0.59	Negative	2	None	GCN Absent
P121	Within	Within	N/A	Maen Hir North	Not within 250 m	0.25	N/A	N/A	N/A	Screened Out
P122	Within	Within	No	Maen Hir North	Not within 250 m	0.68	Negative	N/A	N/A	GCN Absent
P123	Within	Within	N/A	Maen Hir South B	Not within 250 m	0.42	N/A	N/A	N/A	Screened Out
P124	Within	Within	No	Maen Hir South B	Not within 250 m	0.6	Negative	N/A	N/A	GCN Absent

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P125	Within	Within	No	Maen Hir South B	Not within 250 m	0.6	Negative	2	None	GCN Absent
P126	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.37	N/A	N/A	N/A	Screened Out
P127	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.33	N/A	N/A	N/A	Screened Out
P128	Within 50 m	Within 50 m	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P129	Within	Within	N/A	Maen Hir North	Within 100 m	0.42	N/A	N/A	N/A	Screened Out
P130	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P131	Within	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P132	Within	Within	No	Maen Hir North	Within 150 m	0.61	Negative	N/A	N/A	GCN Absent
P133	Within	Within	N/A	Maen Hir North	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P134	Within	Within	N/A	Maen Hir North	Not within 250 m	0.26	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P135	Within	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P136	Within	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P137	Within	Within	N/A	Maen Hir Central	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P138	Within 150 m	Within	Yes	Maen Hir Central	Not within 250 m	0.74	Pending	Pending	Pending	Screened In
P139a	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.33	N/A	N/A	N/A	Screened Out
P139b	Within	Within	N/A	Maen Hir Central	Not within 250 m	0.24	N/A	N/A	N/A	Screened Out
P140	Within 50 m	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P141	Within	Within	Yes	Maen Hir South B	Not within 250 m	0.62	Positive	6	None	GCN Assumed Present
P142	Within	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P143	Within	Within	N/A	Maen Hir South B	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out
P144	Within	Within	No	Maen Hir South B	Not within 250 m	0.49	Negative	N/A	N/A	GCN Absent
P145	Within 200 m	Within 200 m	No	Maen Hir North	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P146	Within 50 m	Within 50 m	N/A	Maen Hir North	Not within 250 m	0.4	N/A	N/A	N/A	Screened Out
P147	Outside 250 m Buffer	Within 100 m	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P148	Within 150 m	Within	N/A	Maen Hir North	Not within 250 m	0.4	N/A	N/A	N/A	Screened Out
P149	Within 250 m	Within	Yes	Maen Hir Central	Yes - Intersects	0.67	Positive	Pending	Pending	GCN Present
P150	Within 200 m	Within	Yes	Maen Hir Central	Yes - Intersects	0.75	Positive	Pending	Pending	GCN Present
P151	Outside 250 m Buffer	Within	Yes	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P152	Outside 250 m Buffer	Outside 250 m Buffer	Yes	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P153	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P154	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P155	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P156	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 200 m	N/A	N/A	N/A	N/A	Screened Out
P157	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 150 m	N/A	N/A	N/A	N/A	Screened Out
P158	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P159	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Yes - Intersects	N/A	N/A	N/A	N/A	Screened Out
P160	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 200 m	N/A	N/A	N/A	N/A	Screened Out
P161	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 200 m	N/A	N/A	N/A	N/A	Screened Out
P162	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P163	Outside 250 m Buffer	Within 50 m	N/A	Maen Hir North	Yes - Intersects	N/A	N/A	N/A	N/A	Screened Out
P164	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P165	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P166	Outside 250 m Buffer	Within	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P167	Within	Within	No	Maen Hir South A	Not within 250 m	0.54	Negative	N/A	N/A	GCN Absent
P168	Within 250 m	Within 50 m	No	Maen Hir South A	Within 200 m	Pending	Pending	Pending	Pending	Screened In
P169	Within 100 m	Within	No	Maen Hir South A	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P170	Within 200 m	Within	No	Maen Hir South A	Yes - Intersects	Pending	Pending	Pending	Pending	Screened In
P171	Within 50 m	Within	No	Maen Hir South A	Within 150 m	Pending	Pending	Pending	Pending	Screened In
P172	Within	Within	No	Maen Hir South A	Within 250 m	0.58	Negative	N/A	N/A	GCN Absent
P173	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P174	Outside 250 m Buffer	Within 250 m	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P175	Within 150 m	Within 50 m	No	Maen Hir South A	Not within 250 m	Pending	Pending	Pending	Pending	Screened In

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P176	Outside 250 m Buffer	Within 250 m	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P177	Outside 250 m Buffer	Within	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P178	Within 150 m	Within	No	Maen Hir South A	Not within 250 m	Pending	Pending	Pending	Pending	Screened In
P179	Within	Within	No	Maen Hir South A	Not within 250 m	0.49	Negative	N/A	N/A	GCN Absent
P180	Within	Within	No	Maen Hir South A	Not within 250 m	0.64	Negative	N/A	N/A	GCN Absent
P181	Within 50 m	Within	No	Maen Hir South A	Not within 250 m	0.79	Negative	N/A	N/A	GCN Absent
P182	Outside 250 m Buffer	Within 150 m	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P183	Within	Within	No	Maen Hir South A	Not within 250 m	0.45	Negative	N/A	N/A	GCN Absent
P184	Within 50 m	Within	N/A	Maen Hir South A	Not within 250 m	0.42	N/A	N/A	N/A	Screened Out
P185	Within 50 m	Within	N/A	Maen Hir South A	Not within 250 m	Unsuitable	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P186	Within 50 m	Within 50 m	No	Maen Hir South A	Not within 250 m	0.49	Negative	N/A	N/A	GCN Absent
P187	Within 150 m	Within	No	Maen Hir South A	Not within 250 m	0.51	Negative	N/A	N/A	GCN Absent
P188	Outside 250 m Buffer	Within 100 m	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P189	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P190	Outside 250 m Buffer	Within 150 m	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P191	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P192	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P193	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P194	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P195	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P196	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P197	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P198	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P199	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P200	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P201	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P202	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P203	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P204	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 200 m	N/A	N/A	N/A	N/A	Screened Out
P205	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir North	Yes - Intersects	N/A	N/A	N/A	N/A	Screened Out
P206	Outside 250 m Buffer	Within 200 m	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P207	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Yes - Intersects	N/A	N/A	N/A	N/A	Screened Out
P208	Outside 250 m Buffer	Within 100 m	N/A	Maen Hir North	Within 150 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P209	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 150 m	N/A	N/A	N/A	N/A	Screened Out
P210	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 200 m	N/A	N/A	N/A	N/A	Screened Out
P211	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 250 m	N/A	N/A	N/A	N/A	Screened Out
P212	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Within 250 m	N/A	N/A	N/A	N/A	Screened Out
P213	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P214	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P215	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir North	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P216	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P217	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Yes - Intersects	N/A	N/A	N/A	N/A	Screened Out
P218	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P219	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South A	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P220	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P221	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P222	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

Prosiect Maen Hir

Pond ID	Location (Solar PV Site)	Location (PEIR Boundary)	Positive Pond Group (as of August 2024)	Area	Historic GCN Records	HSI Score	eDNA Result	No. of Presence Absence Surveys	Population Estimate	Status
P223	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P224	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Within 5 m	N/A	N/A	N/A	N/A	Screened Out
P225	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P226	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out
P227	Outside 250 m Buffer	Outside 250 m Buffer	N/A	Maen Hir South B	Not within 250 m	N/A	N/A	N/A	N/A	Screened Out

7.2 Annex II - Photographs

Table 1: Photographs of Ponds with GCN Present



Photograph 1: Waterbody D002



Photograph 2: Waterbody D003



Photograph 3: Waterbody JH24P003



Photograph 4: Waterbody P016



Photograph 5: Waterbody P016A



Photograph 6: Waterbody P016B



Photograph 7: Waterbody P039



Photograph 8: Waterbody P044



Photograph 9: Waterbody P049



Photograph 10: Waterbody P051



Photograph 11: Waterbody P052



Photograph 12: Waterbody P053



Photograph 13: Waterbody P056



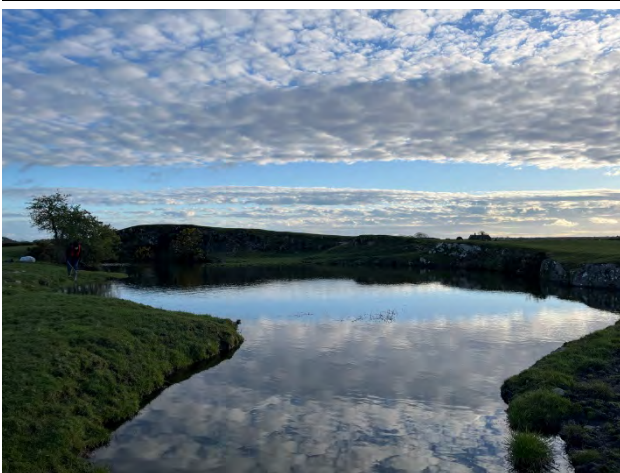
Photograph 14: Waterbody P057



Photograph 15: Waterbody P091



Photograph 16: Waterbody P092_093



Photograph 17: Waterbody P096



Photograph 18: Waterbody P141



Photograph 19: Waterbody P149



Photograph 20: Waterbody P150