

Appendix 8.9

Dormouse Survey Report

Abergelli Power Project Dormouse Survey Report

Abergelli Power Limited
November 2017

Document Control			
Document Properties			
Organisation	AECOM		
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Approved by (2 nd checker)	Kevin Webb		
Title	Dormouse Survey Report		
Document Reference	N/A		
Version History			
Date	Version	Status	Description/Changes
24/11/2017	V1	Draft	First draft

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1. Dormouse Survey Report

1.1 Introduction

- 1.1.1 AECOM was commissioned to undertake a suite of ecological survey work to inform the Abergelli Power Project (the “Project”).
- 1.1.2 The Project Site is located near to the village of Felindre, Swansea, as shown in Figure 1, and the central grid reference for the Project Site is SN65280143. A full description of the development is provided in Chapter 3 (Project and Site Description) of the Preliminary Environmental Impact Report (PEIR).
- 1.1.3 The Preliminary Ecological Appraisal Report (AECOM, 2017) identified that surveys for hazel dormouse *Muscardinus avellanarius* hereafter called ‘dormouse’ or ‘dormice’, were required at the Project Site.
- 1.1.4 This baseline report describes the status of dormouse within the dormouse survey area and makes initial indications of potential effects and outlines initial recommendations for further surveys, mitigation and enhancement.
- 1.1.5 The dormouse survey area encompasses all suitable and accessible areas of woodland, hedgerows and scrub within proximity of and within the Project Site boundary, as shown on Figure 1 and Figure 2.
- 1.1.6 Previous surveys have been undertaken by BSG Ecology which are presented in the PEIR Appendix 8.15.

a) Objectives of the Study

- 1.1.7 The objectives of this study were:
- To identify any designated nature conservation sites within or in the vicinity of the Project Site boundary that have the potential to support dormouse;
 - To identify any known records and/or populations of dormouse in the vicinity of the Project Site boundary;
 - To record and map evidence of dormouse activity;
 - To make a population estimate of dormouse within the Project Site;
 - To make an initial ecological assessment of the Project Site in respect to dormouse;
 - To highlight any initial potential ecological constraints in respect to dormouse;
 - To outline further survey work that may be required; and,
 - To make initial suggestions for mitigation, compensation and enhancement of the natural features identified within the Project Site in respect to dormouse.

1.2 Legislation

1.2.1 The dormouse is a fully protected species under both United Kingdom and European law. It is also included in the Environment Act (Wales) 2016 Section 7 List as a species of principal importance. This is a brief summary of the legislation and is not to be regarded as a definitive legal opinion. When dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

1.2.2 The dormouse was given partial protection under the Wildlife and Countryside Act (WCA) 1981. Schedule 5 of this Act was amended in 1988 making it a fully protected species. Protection is also afforded by Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994, making the dormouse a European Protected Species. These two pieces of legislation operate in parallel, although there are some small differences in scope and wording.

1.2.3 The WCA 1981 transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'). The 1981 Act has been amended several times, most recently by the Countryside and Rights of Way ((CRoW)) Act 2000, which added 'or recklessly' to Section 9(4)(a) and (b). Dormice are listed on Schedule 5 of the 1981 Act, and are therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a dormouse ((Section 9(1)));
- Possess or control any live or dead specimen or anything derived from a dormouse ((S 9(2))) (unless it can be shown to have been legally acquired);
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse ((S 9(4)(a))); and,
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose ((S9(4)(b))).

1.2.4 The Conservation (Natural Habitats &c.) Regulations (known as the Habitats Regulations) transpose into UK law Council Directive 92/43/EEC of 21st May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (often referred to as the 'Habitats ((and Species)) Directive'). Dormice are listed on Annex IV ('European Protected Species') of the Directive meaning that member states are required to put in place a system of strict protection as outlined in Article 12; this is done through inclusion on Schedule 2 of the Regulations. Regulation 39 makes it an offence to:

- Deliberately capture or kill a dormouse (Regulation 39(1)(a));
- Deliberately disturb a dormouse (R. 39(1)(b));
- Damage or destroy a breeding site or resting place of a dormouse (R. 39(1)(d)); and/or,
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse (R. 39(2)).

1.3 Quality Assurance

- 1.3.1 This survey and subsequent report was undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2008 and 14001:2004 and BS OHSAS 18001:2007. In addition, our IMS requires careful selection and monitoring of the performance of all sub-consultants and contractors.
- 1.3.2 All AECOM Ecologists who worked on this project are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2013) when undertaking ecological work.

1.4 Methodology

a) Desk study

- 1.4.1 The objective of the desk study is to review the existing information available in the public domain concerning species and habitats to identify the following:
- Internationally and nationally designated sites for dormouse, up to 2 km from the Site using the Multi Agency Geographic Information for the Countryside (MAGIC) website (NE, 2017);
 - Dormouse records and records of locally designated sites for dormouse up to 2 km from the Site, using the South East Wales Biodiversity Records Centre (SEWBReC);
 - Dormouse within the Section 7 list of Principal Importance for Conservation of Biological Diversity in Wales;
 - Ancient Semi-Natural Woodland (ASNW), Plantation on Ancient Woodland Site (PAWS), Restored Ancient Woodland Site (RAWS) or Ancient Woodland Site of Unknown category (AWSU) within or adjacent to the Project Site using Ancient Woodland Inventory 2011 dataset downloaded from the Lle website (WG and NRW, 2017);
 - Local knowledge of dormouse species and habitats from the County Ecologist;
 - Local knowledge of dormouse species and habitats from the South Wales Mammal Group (SWMG) and,
 - Features of ecological interest surrounding the Project Site, nearby areas of ecological interest and features connecting these habitats (hedgerows, watercourses, railway lines) using aerial photographs and Ordnance Survey (OS) maps.
- 1.4.2 The reports of previous surveys undertaken by BSG Ecology were provided by the client and were reviewed.

b) Dormouse Survey

- 1.4.3 Dormouse surveys were undertaken paying due regard to the Dormouse Conservation Handbook (Bright, *et al.*, 2006). Nest survey tubes (n=129) were installed on 24 and 25 May 2017 in suitable habitat as shown in Figure 2. The survey tubes were retrieved on 20 November 2017.
- 1.4.4 Bright, *et.al.* (2006) provides guidance on survey effort requirements, using an Index of Probability of finding dormice present in nest tubes in any one month. The Index of Probability is based on using 50 nest tubes as a standard. A copy of The Index of Probability scores is provided in Table 1.1.
- 1.4.5 Chanin and Woods (2003) recommend that assumed absence of dormice should not be based on a Search Effort Score of less than 20. The Search Effort Score is calculated by adding the Index of Probability scores for the months in which the survey was undertaken. For example using the values in Table 1.1. If all surveys were undertaken in all months the Search Effort Score would be 25.

Table 1.1 Index of Probability of Finding Dormice Present in Nest Tubes

Month	Index of Probability
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Table taken from Bright *et al.*, 2006.

- 1.4.6 Tubes were inspected in June, August, September October and November 2017 (see Section 1.5 in Limitations) for any presence of dormouse and any signs, particularly for recently constructed nests. One licensed dormouse surveyor was present during all visits. Tube inspection was undertaken using flashlight or by sliding the nest tube trays open. Survey dates and personnel are given in Table 1.2.

Table 1.2 Survey Dates and Survey Personnel

Survey date	Survey Personnel
26 June 2017	Ben Walsh Licence Holder
2 August 2017	Ben Walsh Licence Holder
29 August 2017	Ben Walsh Licence Holder
29 September 2017	Ben Walsh Licence Holder
17 October 2017	Ben Walsh Licence Holder

Survey date	Survey Personnel
20 November 2017	Ben Walsh Licence Holder and Sam Braine Assistant Ecologist

1.4.7 Using Table 1.1, the Search Effort Score for the 2017 dormouse surveys meets the minimum score of 20. As the minimum score has been met and considering that the number of tubes used for the surveys is greater than the minimum of 50 used to calculate the Index of Probability score, the survey provides a robust assessment of presence or likely absence of dormouse in the survey area.

1.5 Limitations

1.5.1 Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a survey, they can contribute to a robust ecological assessment of a site.

1.5.2 Following best practice guidelines (Bright, *et al.*, 2006) the best time to set out dormouse tubes is in March and it is best to leave dormouse tubes out for an entire season from March onwards, for checking in November. However this could not be achieved as access to the suitable areas for dormouse nest tube deployment was not granted until late May 2017 and time constraints of the Project meant that they could not be left for an entire season. However, the tubes were deployed and surveyed within suitable survey months and will still be suitable to determine the presence or absence of dormice within the Project Site. Furthermore, Chanin and Woods (2003) identified that the length of time tubes are deployed is less important than the time of year. Leaving them out from early March to the end of November will give the highest probability of detecting dormice if they are present. With a minor peak of tube use in May and a more substantial one in August and September, it would be best to ensure that tubes are installed no later than April and finally checked no earlier than October. As an absolute minimum they recommend that tubes are installed before the end of July and finally checked after the end of September. Given the evidence above and meeting the minimum Search Effort Score of 20, the deployment of the nest tubes in May is not deemed to be a significant limitation. A survey was not undertaken in July. Instead, two surveys were undertaken in August; one at the beginning of the month and one at the end of the month. Therefore, this is not deemed to be a significant limitation.

1.5.3 On 26 June 2017 not all the tubes could be located due to extensive vegetation cover; 93 tubes were checked on this occasion, on all other occasions all of the tubes were checked. On 29 August 2017 three tubes had to be repositioned as they had fallen. On 29 September three tubes had to be repositioned as they had fallen. On 17 October 2017 it was noted that one of the tubes had fallen and snapped in half. These incidents are not deemed to be a significant limitation.

1.6 Baseline Environment

a) Desk Study Results

1.6.1 The designated habitats, sites and features within proximity to the Project Site are listed in Table 1.3 below.

Table 1.3 Desk Study Results

Designation / Feature	Description
Nationally and Internationally Designated Sites for Dormice within 2 km	There are no national or international designated sites for dormice within 2 km.
Locally Designated Sites within 2 km	The AECOM PEA did not identify any locally designated sites for dormice within 2 km (AECOM, 2017).
Dormice Records from the last 10 years within 2 km	No records of dormice were returned from SEWBReC within the last 10 years (AECOM, 2017).
Priority Species – Listed on The Environment Act (Wales) 2016 Section 7	Dormouse is listed on the Wales Section 7 list.
Surrounding Land Use	<p>The Project Site is located to the north of Junction 46 of the M4 Motorway close to the village of Felindre, Swansea.</p> <p>The Project Site has agricultural fields to the east, south and north. Areas of woodland are located to the south, east and west of the Site. Areas of the National Grid Power Station with associated roads and buildings are partially within and adjacent to the Project Site boundary. A water treatment works is located in the north west outside of the Project Site boundary.</p>
Previous Surveys undertaken by BSG Ecology	<p>The client provided AECOM with the reports of previous surveys undertaken in 2014 by BSG Ecology within the Site (PEIR Appendix 8.15). The Site boundary included within these reports is different to the 2017 Project Site boundary.</p> <p>It was noted that the 2017 Project Site boundary is smaller than the red line boundary used by BSG Ecology in 2014. However, the current Project Site boundary is within the same area as the 2014 red line boundary provided to BSG Ecology and therefore the surveys undertaken would have captured the current Project Site area.</p> <p>The 2014 BSG Ecology Dormouse Report did not identify any dormice or evidence of dormice in the 2014 survey period. A total of 143 tubes were deployed across the months of May and June 2014, and checked on six occasions between the months of June and November (PEIR Appendix 8.15).</p>

b) Dormouse Survey Results

- 1.6.2 No dormice or evidence of dormice was identified during the surveys.
- 1.6.3 One wood mouse *Apodemus sylvaticus* in a nest was identified in tube 49 on 29 August 2017.
- 1.6.4 One wood mouse nest was identified in tube 49 on 29 September 2017.
- 1.6.5 One wood mouse in a nest was identified in tubes 64 and 111 and one wood mouse nest was identified in tube number 81 on 17 October 2017.
- 1.6.6 One wood mouse nest was identified in tube 65 on 20 November 2017.

1.7 Conclusions and Recommendations

- 1.7.1 No dormice or evidence of dormice have been identified within the Project Site.
- 1.7.2 Given the negative results of the field surveys from 2017, the negative results of the BSG Ecology surveys from 2014 (PEIR Appendix 8.15), and the lack of records from SEWBRcC of dormouse from within 2 km it is likely that dormouse is absent from the Project Site.
- 1.7.3 A full assessment of required further surveys has been made during EclA and will be reported in the PEIR. At this stage it is anticipated that no further surveys will be required for dormouse.

a) Recommendations for Mitigation

- 1.7.4 A full series of recommendations for further surveys and mitigation at construction and operation has been undertaken for the EclA and will be reported in the PEIR. At this stage a European Protected Species Licence (EPSL) for dormice is not required and no recommendations are required for mitigation as dormice are considered likely absent from the Project Site.

b) Recommendations for Biodiversity Enhancement

- 1.7.5 A full series of recommendations for biodiversity enhancement has been made during the EclA and reported in the PEIR. At this stage the following preliminary recommendations have been made for general biodiversity enhancements:
- Maintain connectivity within the landscape by avoiding the severance of tree lines, woodland edges, hedgerows and dense scrub; and,
 - Improve the connectivity of the Project Site by planting new hedgerows, infilling current gaps in hedgerows with whips and creating green corridors. It is recommended to use native species.

1.8 References

AECOM (2017). Abergelli Power Station Preliminary Ecological Appraisal Stag Energy, May 2017.

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Figure 1 Phase 1 Habitat Map

Project Title:

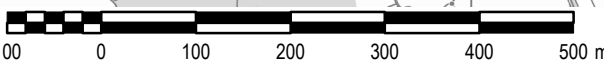
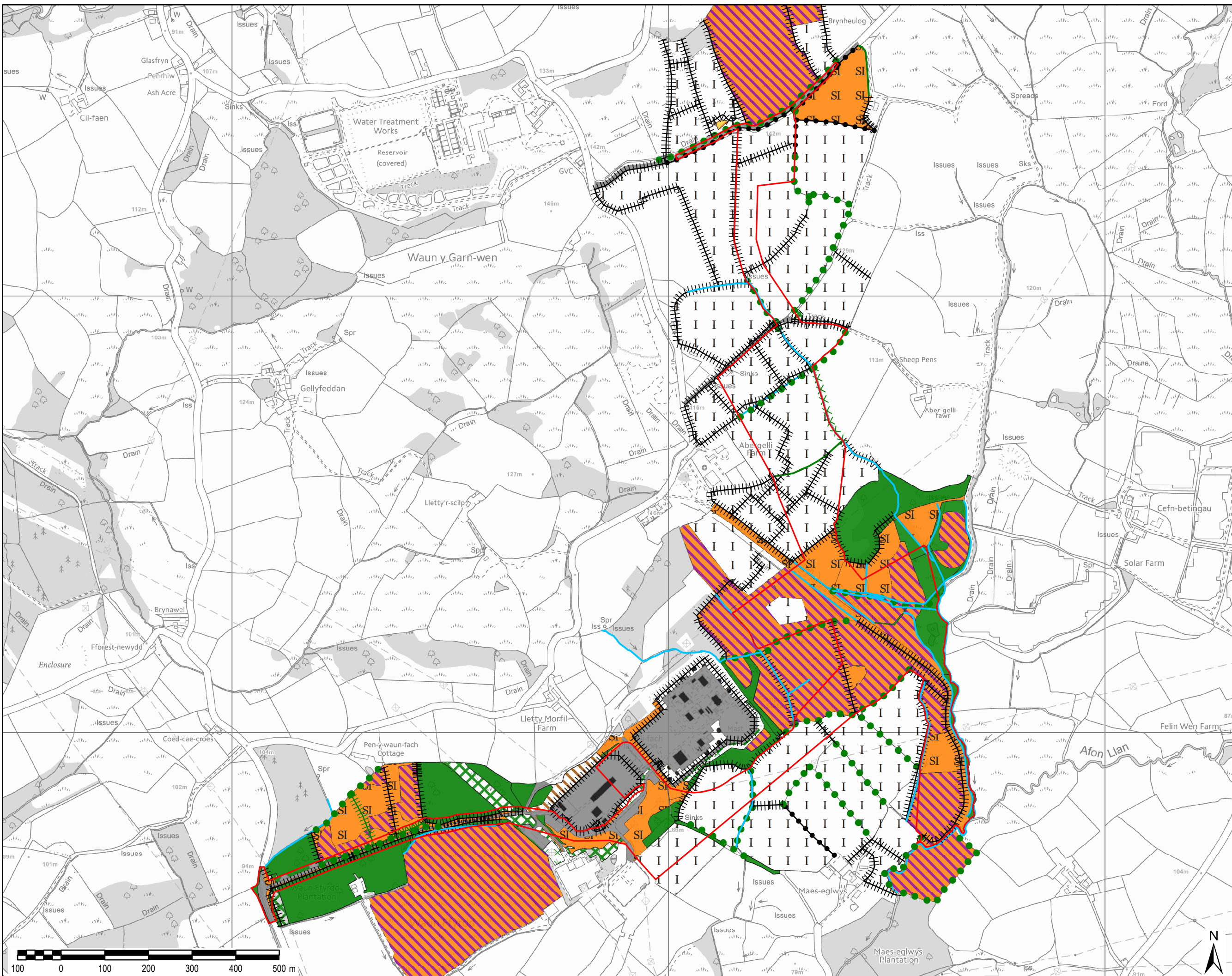
ABERGELLI POWER STATION

Client:

ABERGELLI POWER LTD.

LEGEND

- Project Site Boundary
- Phase 1 Habitat Linear Features**
- X X Scrub - Scattered
- ● Row of trees - broadleaved
- Running Water
- Intact Hedge - Species-Poor
- - Defunct Hedge - Species-Poor
- W Hedge with Trees - Native Species-Rich
- |||| Hedge with Trees - Species-Poor
- |||| Fence
- Earth Bank
- Phase 1 Habitat Areas**
- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Dense/Continuous scrub
- Scattered scrub
- Semi-improved - neutral grassland
- Improved grassland
- Marsh/marshy grassland
- Tall ruderal - herb and fern
- Dry heath/acid grassland mosaic
- Buildings
- Bare ground
- Hard standing



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PHASE 1 HABITAT MAP

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Figure 2 Dormouse Tube Locations

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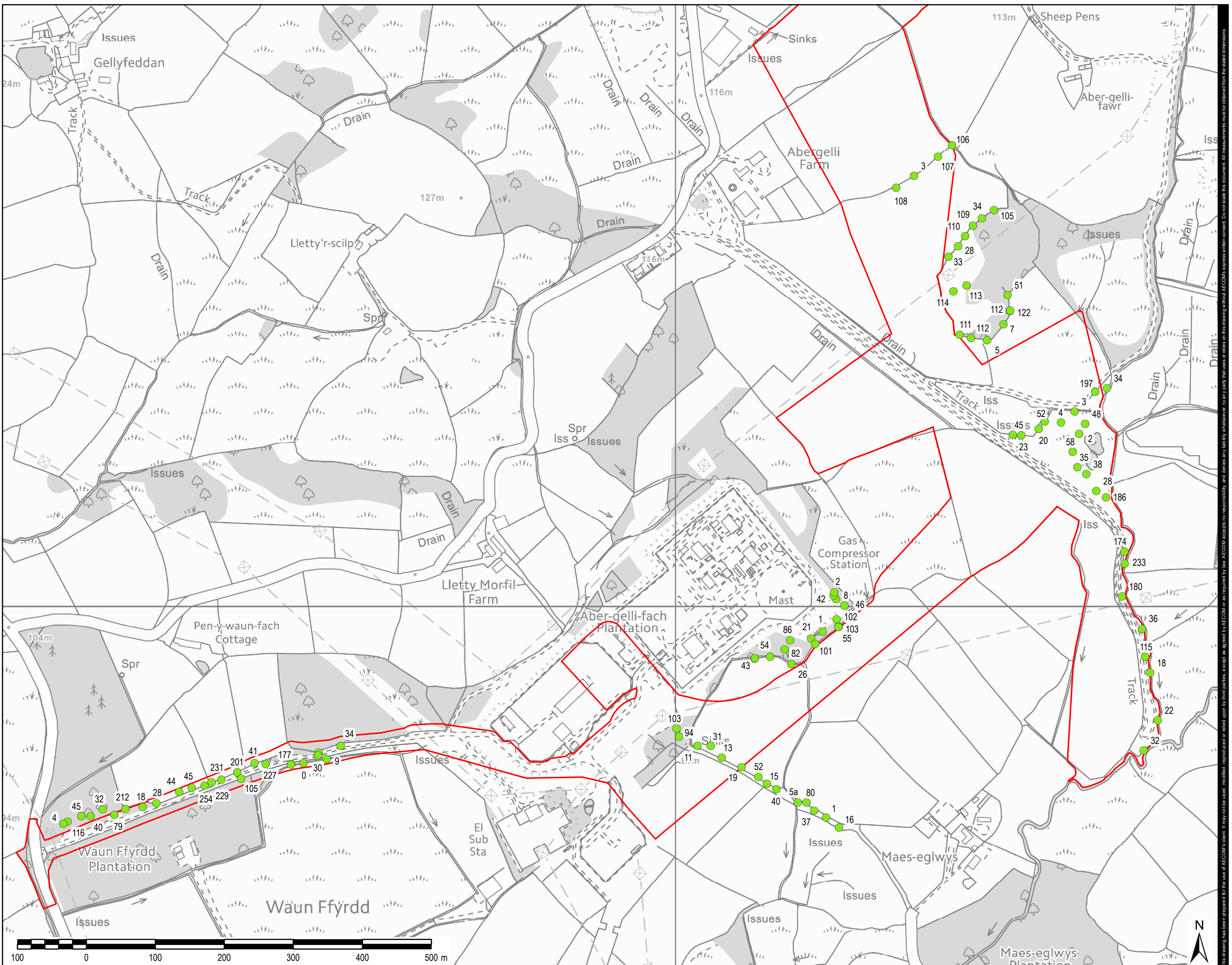
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LEGEND

- Project Site Boundary
- Dormouse Tube Locations



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FIGURE 2 002

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