

The background of the page is a vibrant green field of grass, slightly out of focus, with a bokeh effect of light circles. The top of the page has a dark purple gradient.

TYDDYN FORGAN ESS, NORTH WALES

Ecological Impact Assessment

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SUMMARY

This report presents an assessment of the potential ecological impacts of an ESS project adjacent to the Pentir substation. The site comprises marshy grassland with scattered gorse scrub and acid grassland. There is a tree belt adjacent to part of the site, and the existing substation and its access road are to the north and west of the site.

The site is suitable for a range of nesting birds, but it is not used by nesting skylarks or lapwing. There is a 'low' population of common lizards at the site, with a peak count of one individual recorded during surveys in 2024.

In the absence of avoidance, mitigation or compensation, the main potential ecological impacts during construction and operation of the project are the temporary loss of marshy grassland and a risk of killing or injury to common lizards and nesting birds. Considering the nature and scale of these impacts, the ecological effects would not be significant beyond a Site or Local level.

Potential impacts during construction will be avoided by the application of standard techniques including the translocation of common lizards away from the construction areas, and the timing of works to avoid the nesting bird season. These will be detailed in a Construction Ecological Management Plan. The loss of marshy grassland will be offset by the management of retained areas to improve their structural and botanical diversity, and the introduction of wetland scrapes.

Considering the nature of the project and its ecological effects, the proposals will deliver a net benefit for biodiversity.

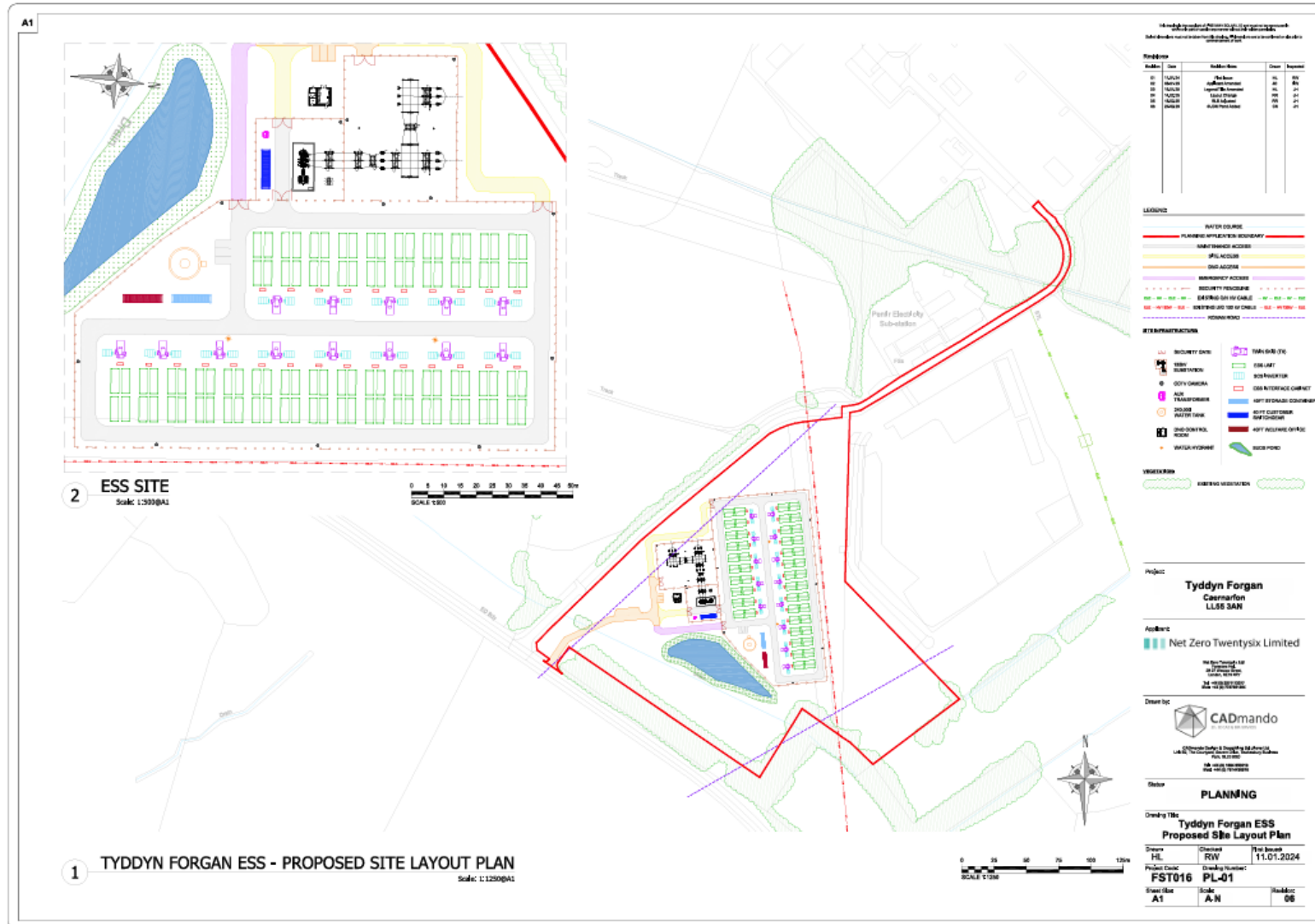
1. INTRODUCTION

- 1.1. Engain were commissioned by Net Zero Twenty six Ltd to undertake an Ecological Impact Assessment (EclA) of a proposed Energy Storage System (ESS) at Tyddyn Forgan in North Wales.
- 1.2. The location of the site can be seen in **Figure 1**. The site largely comprises rush-dominated grassland surrounded by woodland, hardstanding and agricultural fields, adjacent to the existing Pentir substation. The ordnance survey grid reference for the site is SH55706733.
- 1.3. The proposed development includes ESS units, new access tracks and associated hardstanding.
- 1.4. The scope of the assessment is based upon the guidelines for EIA in the UK, published in 2018 by the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 1.5. The purpose of this report is to assess potential ecological impacts and set out how the proposals have been designed to deliver a net benefit for biodiversity in line with the DECCA framework.
- 1.6. The assessment includes an ecological desk study, identifying any protected or notable species and habitats within the search area, as well as a field survey of the site.

Figure 1, "Location of the site"



Figure 2, "Proposed Site Layout"



2. LEGISLATION AND PLANNING POLICY

2.1. The relevant legislation for this report includes:

- *Conservation of Habitats and species (Amendment) Regulations 2017; and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*
- *The Wildlife and Countryside Act 1981 (as amended)*
- *The Natural Environment and Rural Communities (NERC) Act 2006, superseded in places by:*
- *The Environment (Wales) Act 2016. Section 6 of the Act places a duty on public authorities to ‘seek to maintain and enhance biodiversity’ as far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to ‘promote the resilience of ecosystems.’*

Planning Policy Wales

- 2.2. Part 6 of Edition 12, adopted in February 2024, of Planning Policy Wales sets out the relevant national policy in relation to biodiversity and ecosystem resilience (Section 6 duty). This includes the DECCA Framework (**D**iversity; **E**xtent; **C**ondition; **C**onnectivity; and **A**daptability to Change).
- 2.3. This requires the implementation of a stepwise approach to “*maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for.*”
- 2.4. Planning Policy Wales is supported by ‘*Technical Advice note 5 – Nature conservation and Planning*’.

Local Planning Policy

- 2.5. The adopted development plan for the project is the Anglesey and Gwynedd Joint Local Development Plan 2011 – 2026. Gwynedd Council are in the process of developing a revised local development plan for the period 2024 – 2039.
- *Strategic Policy Ps 19: Conserving And Where Appropriate Enhancing The Natural Environment*
 - *Policy Amg1: Area Of Outstanding Natural Beauty Management Plans*

- *Policy Amg 2: Special Landscape Areas*
- *Policy Amg 3: Protecting And Enhancing Features And Qualities That Are*
- *Policy Amg 5: Local Biodiversity Conservation*
- *Policy Amg 6: Protecting Sites Of Regional Or Local Significance*

3. METHODOLOGY

Desk Study

- 3.1. Cofnod - North Wales Environmental Information Services were contacted on the 13th of January 2025 to provide biological records concerning both species and habitats within 2km of the red line boundary.

Field Survey

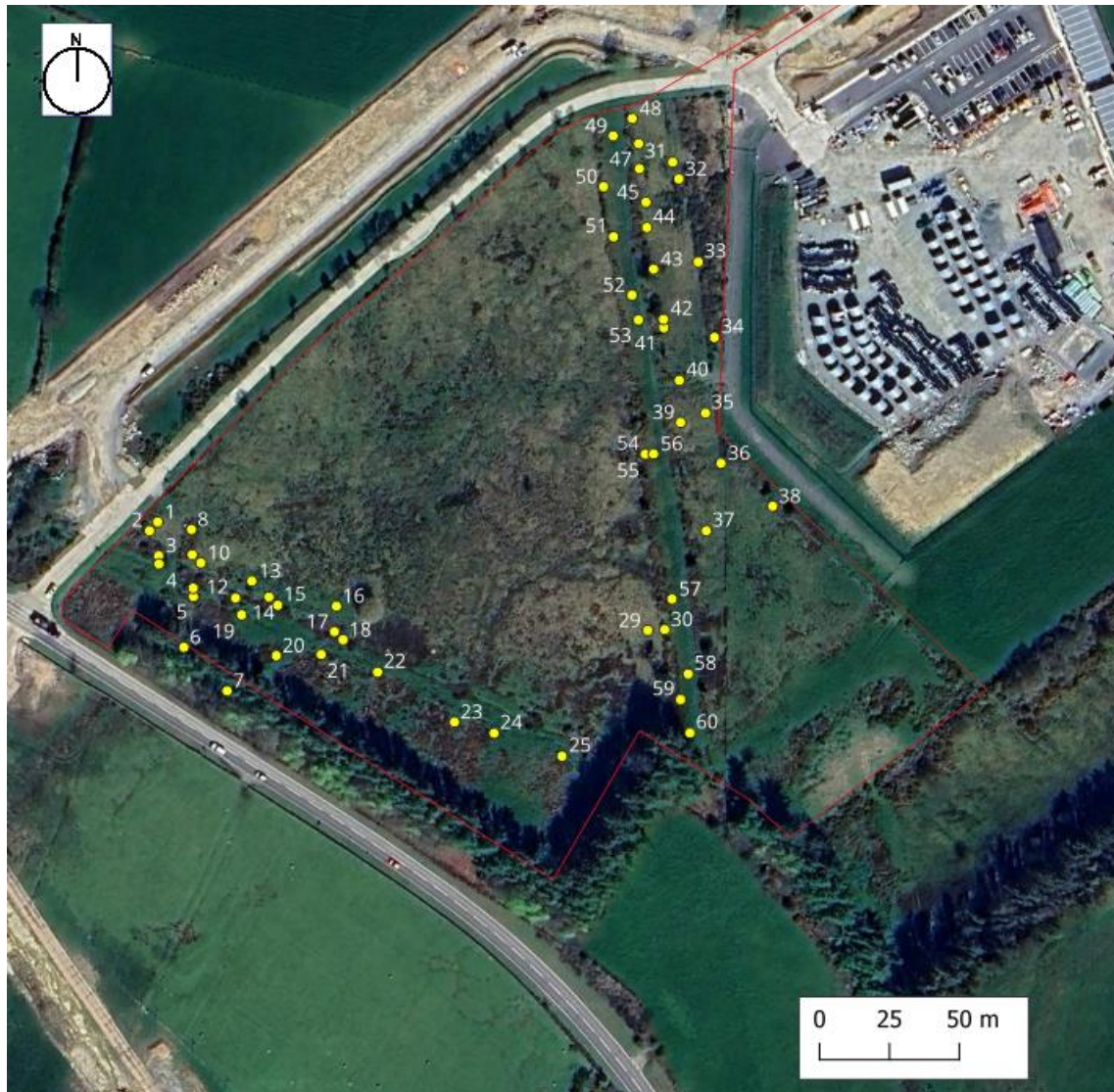
- 3.2. A scoping survey was carried out on site on the 4th of July 2024, to determine the nature of its habitats, its potential to support protected species and the need for any further surveys to support the EclA..
- 3.3. A vegetation survey was undertaken on the 19th of September 2024. This consisted of a survey of the site habitats using the methods of the handbook for Phase 1 Habitat survey (JNCC 2010) whereby all habitats within the study area are mapped and described using a series of 'target notes'.
- 3.4. Where appropriate, condition assessments were recorded and are also described with reference to the National Vegetation Classification (NVC) system. The survey also included a search for any invasive plant species such as *Impatiens glandulifera* or *Reynoutria japonica*.
- 3.5. The potential for the site to support legally protected and notable species has been assessed using the desk study results combined with observations during the field survey. The assessment of habitat suitability for protected and notable species was based on knowledge and judgement of an experienced professional informed by sources of guidance on habitat suitability assessment for key animal groups including:
 - Amphibians (Gent and Gibson, 2003)
 - Badgers (Harris et al., 1991; and Roper, 2010);
 - Bats (Collins, 2016; and Mitchell-Jones, 2004);
 - Birds (wintering and breeding) (Gilbert et al., 1998; and Bibby et al., 2000);
 - Terrestrial Invertebrates (Drake et al., 2007; and Kirby, 2001).

- 3.6. Due to the suitability of the habitat at the site and key potential refugia (in the stone wall along the sites edge), reptile surveys were conducted between September and October 2024.
- 3.7. Reptile surveys were based on the methods set out by Froglife in the 1st edition of ‘*Advice Note 10: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*’. Artificial refugia were placed in 60 locations (mats 26, 27 and 28 were damaged during the survey season) across the site, as shown on **Figure 3**. These refugia sites were surveyed for the presence and absence of reptiles at the site records species, sex, age, and any other important details.

Table 1, "Reptile Survey Dates"

Visit No.	Date	Time (Start & End)	Weather & Temperature
1	20/09/2024	09:00 (14:00)	20°C Fine and sunny. Zero cloud
2	24/09/2024	10:30 (13:30)	15°C Cloudy. Damp underfoot. 100% cloud
3	27/09/2024	10:30 (13:30)	11°C Showery initially then sunny. Between 70-100% cloud
4	02/10/2024	10:30 (13:30)	13°C Cloudy then sunny. 90% cloud initially moving to 50%
5	03/10/2024	10:30 (13:30)	13°C 10% cloud throughout. Sunny
6	08/10/2024	10:30 (13:30)	12°C 100% cloud initially going to 80% with sunny spells. Light showers.
7	11/10/2024	10:30 (13:30)	10°C 50% Cloud. Cold & Sunny

Figure 3, "Reptile Mat Locations"



Zone Of Influence

- 3.8. The Zone of Influence for a project is the area within which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site where there are ecological or hydrological links beyond the site boundaries.
- 3.9. Based on the scale and nature of the development, it has been assessed that the Zone of Influence arising from these works is unlikely to be greater than 2km from the centre of the site. Therefore, these distances have been used to collect the ecological data search information.
- 3.10. The habitat survey area comprised primarily the site. However, adjacent land was viewed where possible.

Important Ecological Features

- 3.11. This report provides an assessment of whether the site supports, or is likely to support, 'important ecological features' as defined in the CIEEM guidance.
- 3.12. The main criteria on which important ecological features are identified include diversity, naturalness, and extent.
- 3.13. The following geographical frame of reference is also used:
- International and European;
 - National (Wales);
 - Regional (Gwynedd);
 - Local (Pentir).

Limitations

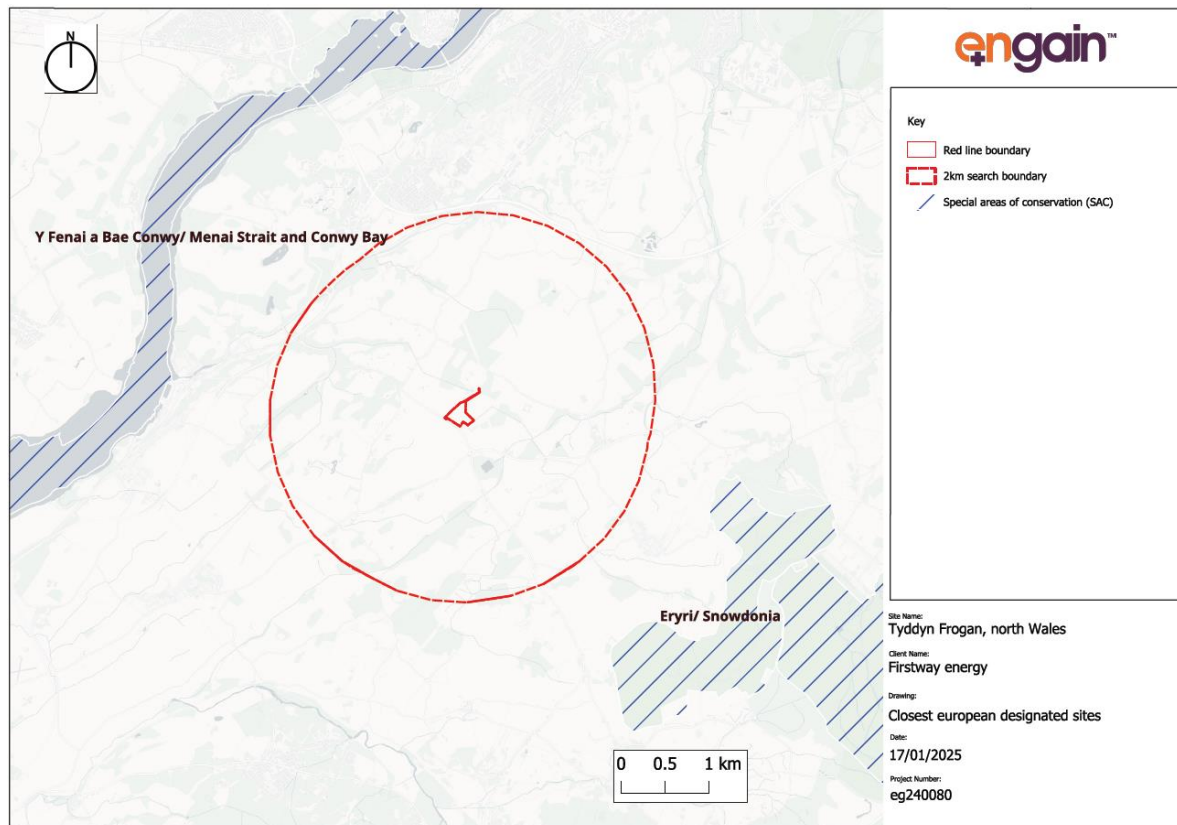
- 3.14. Engain cannot verify the accuracy of third-party information.
- 3.15. The field survey is not definitive and represents a snapshot of the ecological status of a site. Furthermore, data records help to provide a historical context, however the absence of evidence of a species does not prove that it does not use the site.

4. BASELINE RESULTS

Designated Sites

- 4.1. There are no statutory designated sites within 2km of the proposed ESS site. The closest two European designated sites are Eryri / Snowdonia SAC locate 2.89km east and Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC located 3.6km west. Both of these sites are designated for features which are not applicable to the application site.

Figure 4, "European statutory sites"



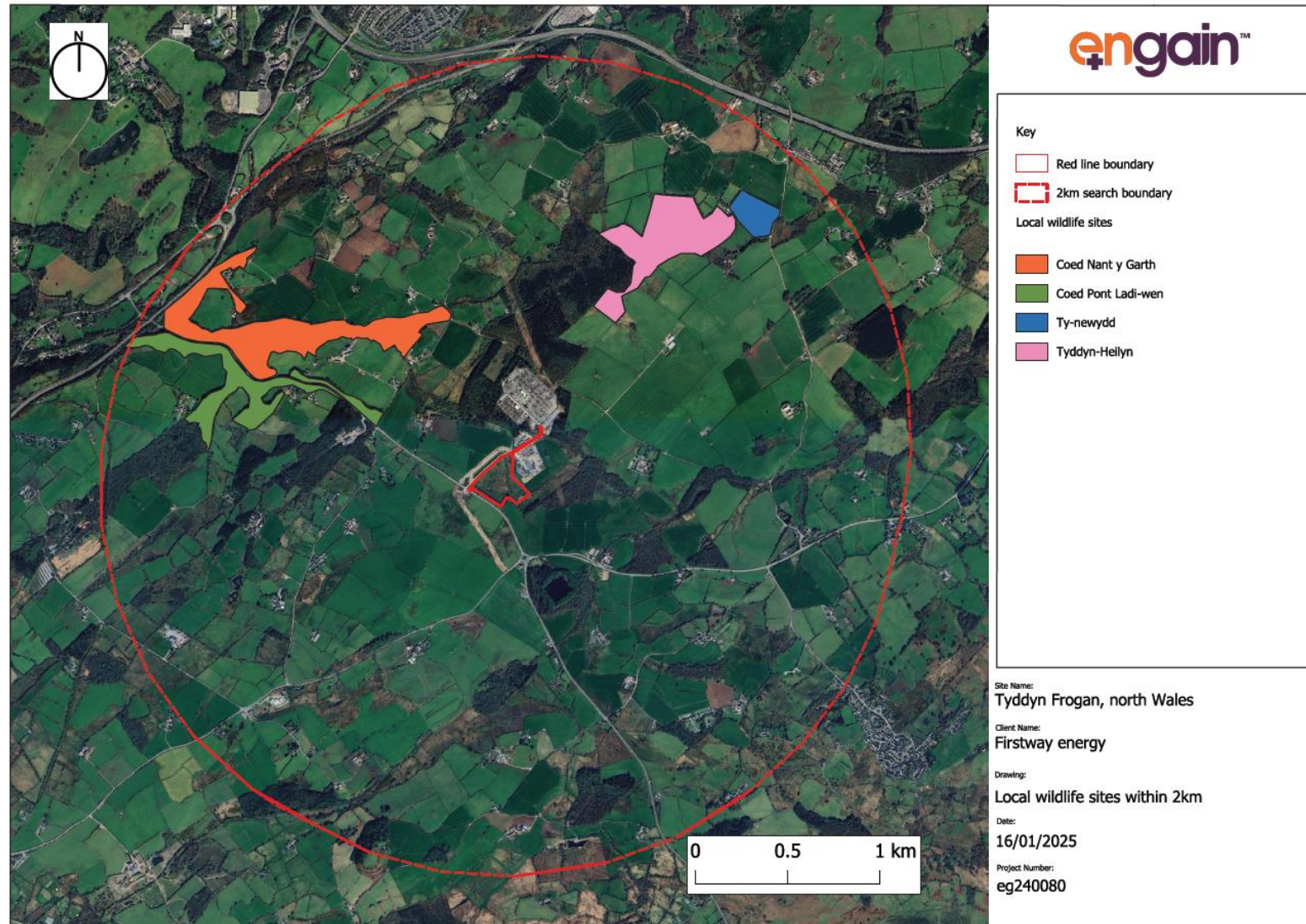
- 4.2. There are four local wildlife sites within 2km of the search area, and 25 Potential Wildlife Sites.

Table 2, "Local wildlife sites and reason for designations"

Name	Habitat	Reason for designation	Distance from the site
Ty-newydd	Semi-improved neutral grassland; broadleaved woodland	Qualifying Habitat: Rush pasture	1.79km North

Name	Habitat	Reason for designation	Distance from the site
Tyddyn-Heilyn	Semi-improved neutral grassland; swamp; marshy grassland	Qualifying Habitat: Rush pasture, wet woodland, blanket bog, pond	943.6m North
Coed Nant y Garth	Coniferous woodland; broadleaved woodland; acid grassland	Qualifying Habitat: Mixed lowland woodland, stream	792.3m West
Coed Pont Ladi-wen	Coniferous woodland		836.7m West

Figure 5, "Local Wildlife Sites Within 2km"



Habitats

- 4.3. The majority of the site is dominated by marshy grassland, in which soft rush (*Juncus effusus*) is the dominant species, with some more open patches where sheep's-fescue (*Festuca ovina*) is dominant (**Table 3**). Amongst the dense rushes there are variations and micro-climates, with slightly raised ground where heathers are present, and wetter hollows where there are sphagnum mosses.
- 4.4. Overall, however these open areas make up a small proportion of the site and species-diversity is limited. The vegetation is typical of marshy grassland on poorly-drained, acidic soils in the lowlands (below 300m), and is broadly comparable to the NVC type **M23 *Juncus effusus/acutiflorus* - *Galium palustre* rush-pasture**.
- 4.5. The site is managed by mechanical means rather than grazing and this may explain the dominance of rushes and the limited botanical and structural diversity compared with more species-rich examples of the type. It is a small fragment in a landscape where similarly small fragments occur occasionally in patches.

Table 3, "NVC-style Quadrat Data"

Species	Q1	Q2	Q3	Q4	Q5	Freq.	Abund.
<i>Festuca ovina</i>	8	4	4	4	4	5	4-8
<i>Juncus effusus</i>	5	8	3	7	4	5	3-8
<i>Molinia caerulea</i>	6	4	4	6	7	5	4-7
<i>Agrostis capillaris</i>	7	6	4	3	4	5	3-7
<i>Luzula multiflora</i>	4	3	3	3	3	5	3-4
<i>Potentilla erecta</i>	4	3	4	4	3	5	3-4
<i>Holcus lanatus</i>	4	4	3	4	3	5	3-4
<i>Ryhtidiadelphus squarrosus</i>	4	4	4	3	4	5	3-4
<i>Calluna vulgaris</i>	4		4	1	4	4	1-4
<i>Calliargon cuspidatum</i>		2	3	3	3	4	2-3
<i>Carex nigra</i>		1	3	1	2	4	1-3
<i>Juncus acutiflorus</i>		1	1	1	1	4	1-1
<i>Brachythecium rutabulum</i>	4	3			3	3	3-4

Species	Q1	Q2	Q3	Q4	Q5	Freq.	Abund.
<i>Festuca rubra</i>		4	1		2	3	1-4
<i>Rumex acetosella</i>	3	1	1			3	1-3
<i>Nardus stricta</i>				3	4	2	3-4
<i>Galium saxatile</i>				3	3	2	3-3
<i>Pedicularis palustris</i>			3		2	2	2-3
<i>Ulex europaeus</i>	1				1	2	1-1
<i>Sphagnum capillifolium</i>			6			1	6
<i>Succisa pratensis</i>				4		1	4
<i>Trifolium repens</i>					3	1	3
<i>Poa annua</i>					1	1	1
<i>Rubus fruticosus</i>	1					1	1

Figure 6, "Baseline Habitat Plan"



Figure 7, "Soft rush Dominating the Site"



Figure 8, "Tree Belt on Site Boundary"



Figure 9, "Young Gorse Growth"



Figure 10, "Open areas of Species-poor Acid Grassland"



Bats

- 4.6. There are records of nine different bat species within the data search. None of the records are from the proposed ESS site.
- 4.7. The majority of the site is somewhat exposed so that, whilst the grassland provides suitable foraging habitat, it may not be used by large numbers of bats. The southern and western edges of the site are sheltered by the tree belts and provide better areas for foraging bats.
- 4.8. There are no trees or structures suitable for roosting within or adjacent to the site boundary.

Figure 11, "Bat species within 2km"



Birds

- 4.9. This site and the surrounding area have been subjected to a large number of bird surveys in connection with other energy infrastructure projects. This has resulted in records of numerous species from the site (**Figure 13**). There are also 3,449 bird records in the 2km data search, including wading birds, gulls, raptors, common and farmland species. In addition to these records, stonechat calls were heard during the scoping survey of the site in July 2024, and a snipe was flushed during the vegetation survey on the 19th of September 2024. The density of the rush cover and the presence of shrubs and trees around it, plus the regular vehicle movements associated with the Pentir substation, make it unlikely that lapwing or skylark would nest at the site. Other species such as snipe, stonechat and meadow pipit could nest at the site.

Figure 12, "Scrub and tall vegetation at the site"



Figure 13, "Bird Records from the Site"



Table 4, "Bird Records within 2km of the Site (Records from the Site in Bold)"

Name	Number Of Records	Protections	Name	Number Of Records	Protections
Barn Owl	34	Bern Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A BTO– Amber List Wildlife And Countryside Act Schedule 1.1 And 9	Meadow Pipit	62	Bern Convention Appendix 2 BTO- Amber List BTO (Wales) – Amber List
Black-Headed Gull	26	EU Birds Directive Annexe 2.2 ICUN ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO– Amber List BTO (Wales) – Red List	Merlin	4	EU Birds Directive Annexe 1 Bern Convention Appendix 2 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A ICUN Red List - Endangered BTO- Red List BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1
Brambling	10	Wildlife And Countryside Act Schedule 1.1	Mistle Thrush	115	EU Birds Directive Annexe 2.2 ICUN ICUN Red List - Vulnerable BTO- Red List
Brent Goose	3	EU Birds Directive Annexe 2.2 Bonn Convention Appendix 2	Moorhen	23	EU Birds Directive Annexe 2.2 Bonn Convention Appendix 2

Name	Number Of Records	Protections	Name	Number Of Records	Protections
		Great Britain Non-Native Species Inventory Portal Checklist Of Non-Native Species BTO– Amber List BTO (Wales) – Amber List			ICUN Red List - Vulnerable BTO- Amber List
Bullfinch	52	UK Biodiversity Action Plan Species Environment (Wales) Act Section 7 BTO– Amber List BTO (Wales) – Red List	Mute Swan	30	EU Birds Directive Annex 2.2 Bonn Convention Appendix 2 Great Britain Non-Native Species Inventory Portal Checklist Of Non-Native Species BTO (Wales) – Amber List
Chough	4	EU Birds Directive Annex 1 Bern Convention Appendix 2 ICUN ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1	Nightjar	1	UK Biodiversity Action Plan Priority Species EU Birds Directive Annex 1 Bern Convention Appendix 2 Environment (Wales) Act Section 7 BTO- Amber List BTO (Wales) – Amber List
Coal Tit	110	Bern Convention Appendix 2 BTO (Wales) – Amber List	Oystercatcher	3	EU Birds Directive Annex 2.2 BTO- Amber List BTO (Wales) – Amber List
Collared Dove	17	EU Birds Directive Annex 2.2 Great Britain Non-Native Species Inventory Portal Checklist Of Non-Native Species ICUN ICUN ICUN Red List - Near Threatened	Peregrine	15	EU Birds Directive Annex 1 Bern Convention Appendix 2 Bonn Convention Appendix 2

Name	Number Of Records	Protections	Name	Number Of Records	Protections
					Convention On International Trade Of Endangered Species Annexe A Wildlife And Countryside Act Schedule 1.1
Common Gull	4	EU Birds Directive Annexe 2.2 UK Biodiversity Action Plan Species BTO (Wales) – Red List	Red Kite	29	EU Birds Directive Annexe 1 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1 Wildlife & Countryside Act Schedule 9
Coot	34	EU Birds Directive Annexe 2.1 ICUN ICUN ICUN Red List - Near Threatened	Redshank	1	EU Birds Directive Annexe 2.2 Bonn Convention Appendix 2 ICUN Red List - Near Threatened ICUN Red List - Vulnerable BTO- Amber List BTO (Wales) – Amber List
Cormorant	12	ICUN Red List - Near Threatened BTO (Wales) – Amber List	Redstart	2	Bern Convention Appendix 2 BTO- Amber List BTO (Wales) – Amber List
Crossbill	3	Bern Convention Appendix 2 Wildlife And Countryside Act Schedule 1.1	Redwing	53	EU Birds Directive Annexe 2.2 ICUN Red List - Critically Endangered

Name	Number Of Records	Protections	Name	Number Of Records	Protections
					BTO- Amber List BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1
Cuckoo	5	UK Biodiversity Action Plan Species ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO– Red List BTO (Wales) – Red List	Reed Bunting	18	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 Environment (Wales) Act Section 7 BTO- Amber List BTO (Wales) – Amber List
Curlew	57	UK Biodiversity Action Plan Species EU Birds Directive Annex 2.2 Bonn Convention Appendix 2 Environment (Wales) Act Section 7 BTO– Red List BTO (Wales) – Red List	Rook	54	EU Birds Directive Annex 2.2 ICUN Red List - Near Threatened BTO- Amber List
Dipper	7	Bern Convention Appendix 2 ICUN Red List - Near Threatened BTO– Amber List BTO (Wales) – Amber List	Sedge Warbler	12	BTO- Amber List
Dunnock	199	UK Biodiversity Action Plan Species Bern Convention Appendix 2 Environment (Wales) Act Section 7	Shoveler	4	EU Birds Directive Annex 2.1 Bonn Convention Appendix 2

Name	Number Of Records	Protections	Name	Number Of Records	Protections
		BTO– Amber List			Convention On International Trade Of Endangered Species Annexe C BTO- Amber List BTO (Wales) – Amber List
Fieldfare	21	EU Birds Directive Annexe 2.2 ICUN Red List – Possibly Extinct BTO- Red List BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1 EU Birds Directive Annexe 2.2	Skylark	26	UK Biodiversity Action Plan Priority Species EU Birds Directive Annexe 2.2 Environment (Wales) Act Section 7 BTO- Red List BTO (Wales) – Amber List
Gadwall	3	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 BTO- Amber List BTO (Wales) – Amber List EU Birds Directive Annexe 2.1 Great Britain Non-Native Species Inventory Portal Checklist Of Non-Native Species	Snipe	8	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 ICUN Red List - Near Threatened BTO- Amber List BTO (Wales) – Amber List
Garden Warbler	32	BTO (Wales) – Amber List	Song Thrush	160	UK Biodiversity Action Plan Priority Species EU Birds Directive Annexe 2.2 Environment (Wales) Act Section 7 BTO- Amber List BTO (Wales) – Amber List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
Goldcrest	105	Bern Convention Appendix 2 BTO (Wales) – Amber List	Sparrowhawk	42	Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A ICUN Red List - Near Threatened BTO- Amber List
Grasshopper Warbler	15	UK Biodiversity Action Plan Priority Species BTO- Red List BTO(Wales) - Red List Environment (Wales) Act Section 7	Spotted Flycatcher	6	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 Bonn Convention Appendix 2 Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List
Great Black-Backed Gull	13	EU Birds Directive Annexe 2.2 Red List – Endangered BTO- Amber List BTO(Wales) - Red List	Starling	74	UK Biodiversity Action Plan Priority Species EU Birds Directive Annexe 2.2 ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List
Green Woodpecker	20	Bern Convention Appendix 2 BTO (Wales) – Amber List BTO (Wales) – Amber List	Stock Dove	9	EU Birds Directive Annexe 2.2 BTO- Amber List
Greenfinch	38	Bern Convention Appendix 2	Swallow	100	Bern Convention Appendix 2

Name	Number Of Records	Protections	Name	Number Of Records	Protections
		ICUN Red List – Endangered BTO- Red List			BTO (Wales) – Amber List
Grey Heron	39	ICUN Red List - Near Threatened	Swift	26	ICUN Red List – Endangered BTO- Red List BTO (Wales) – Amber List
Grey Wagtail	18	Bern Convention Appendix 2 ICUN Red List - Near Threatened BTO- Amber List BTO (Wales) – Amber List	Tawny Owl	18	Bern Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A ICUN Red List - Near Threatened BTO- Amber List
Greylag Goose	50	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 BTO- Amber List Wildlife & Countryside Act 1981 Schedule 1.2 EU Birds Directive Annexe 2.1	Teal	5	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe C BTO- Amber List BTO (Wales) – Amber List
Hen Harrier	1	EU Birds Directive Annexe 1 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A ICUN Red List - Vulnerable Environment (Wales) Act Section 7	Tree Pipit	2	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 Environment (Wales) Act Section 7 BTO- Red List BTO (Wales) – Amber List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
		BTO- Red List BTO (Wales) - Red List Wildlife And Countryside Act Schedule 1.1			
Herring Gull	113	UK Biodiversity Action Plan Priority Species EU Birds Directive Annexe 2.2 ICUN Red List - Data Deficient ICUN Red List – Endangered Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List	Tufted Duck	13	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 BTO (Wales) – Amber List
Hobby	2	Bern Convention Appendix 2 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1 BTO (Wales) – Amber List	Turnstone	1	Bern Convention Appendix 2 Bonn Convention Appendix 2 ICUN Red List - Vulnerable BTO- Amber List
Honey-Buzzard	1	EU Birds Directive Annexe 1 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A Red List – Endangered	Wheatear	5	Bern Convention Appendix 2 BTO- Amber List BTO (Wales) – Amber List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
		BTO- Amber List BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1			
House Martin	37	Bern Convention Appendix 2 ICUN Red List - Vulnerable BTO- Red List BTO (Wales) – Amber List	Whimbrel	10	EU Birds Directive Annexe 2.2 Bonn Convention Appendix 2 ICUN Red List - Critically Endangered BTO- Red List BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1
House Sparrow	69	UK Biodiversity Action Plan Priority Species Environment (Wales) Act Section 7 BTO- Red List BTO (Wales) – Amber List	Whitethroat	60	BTO- Amber List BTO (Wales) – Amber List
Jack Snipe	1	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 BTO (Wales) – Amber List EU Birds Directive Annexe 2.1	Wigeon	4	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe C Great Britain Non-Native Species Inventory Portal Checklist Of Non-Native Species ICUN Red List - Near Threatened BTO- Amber List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
					BTO (Wales) – Amber List
Kestrel	45	Bern Convention Appendix 2 Bonn Convention Appendix 2 Convention On International Trade Of Endangered Species Annexe A ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO- Amber List BTO(Wales) - Red List	Willow Tit	20	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 Red List - Endangered Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List
Kingfisher	1	EU Birds Directive Annexe 1 Bern Convention Appendix 2 BTO (Wales) – Amber List Wildlife And Countryside Act Schedule 1.1	Willow Warbler	139	BTO- Amber List BTO(Wales) - Red List
Lapwing	21	UK Biodiversity Action Plan Priority Species EU Birds Directive Annexe 2.2 Bonn Convention Appendix 2 Red List – Endangered ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List	Wood Warbler	5	UK Biodiversity Action Plan Priority Species ICUN Red List - Vulnerable Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
Lesser Black-Backed Gull	55	EU Birds Directive Annexe 2.2 Red List - Data Deficient BTO- Amber List BTO (Wales) – Amber List	Woodcock	13	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 ICUN Red List - Vulnerable BTO- Red List BTO (Wales) – Amber List
Lesser Redpoll	48	UK Biodiversity Action Plan Priority Species Environment (Wales) Act Section 7 BTO(Wales) - Red List	Woodpigeon	133	EU Birds Directive Annexe 2.1 BTO- Amber List
Linnet	89	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 ICUN Red List - Near Threatened Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List	Wren	266	Bern Convention Appendix 2 BTO- Amber List
Long-Tailed Tit	68	BTO (Wales) – Amber List	Yellow Wagtail	1	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 ICUN Red List - Near Threatened Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List

Name	Number Of Records	Protections	Name	Number Of Records	Protections
Mallard	73	EU Birds Directive Annexe 2.1 Bonn Convention Appendix 2 ICUN Red List - Near Threatened BTO- Amber List BTO (Wales) – Amber List	Yellowhammer	33	UK Biodiversity Action Plan Priority Species Bern Convention Appendix 2 Environment (Wales) Act Section 7 BTO- Red List BTO(Wales) - Red List

Badgers

- 4.10. The data search returned 20 records of badgers within 2km of the site. The closest sett was located 626m away from the site.
- 4.11. No signs of badgers were recorded at the site with no obvious paths and no sign of digging or foraging. There is potential for badgers to be in the surrounding area in particularly, the woodland surrounding the substation.

Reptiles

- 4.12. There are 16 records of reptiles were within 2km of the site, including common lizard, grass snake, adder, and slow-worm. The closest record to the site was a common lizard recorded in the woodland to the south of the Pentir substation, 436m from the centre of the site.
- 4.13. The grassland at the site has variable sward with tussocky grass suitable habitats for reptiles. The stone walls, gorse and bramble scrub around the perimeter of the site provide a variety of areas suitable for basking, sheltering and foraging.
- 4.14. Single common lizards were recorded during the reptile surveys (**Table 5**). Using Froglife Advice Sheet 10, the population would be classified as 'low' (as opposed to 'good' or 'exceptional').

Figure 14, "Stone wall to the north of the site"



Table 5, "Results from the 2024 reptile surveys"

Date	Tin No.	Male	Female	Unknown	Juvenile
20/09/2024	12	-	-	1	-
20/09/2024	52	-	-	-	1
02/10/2024	55	-	1	-	-
02/10/2024	43	-	-	1	-
02/10/2024	33	-	-	-	1
02/10/2024	55	1	-	-	-
02/10/2024	52	-	-	1	-
08/10/2024	47	-	-	-	1
08/10/2024	50	-	-	-	1

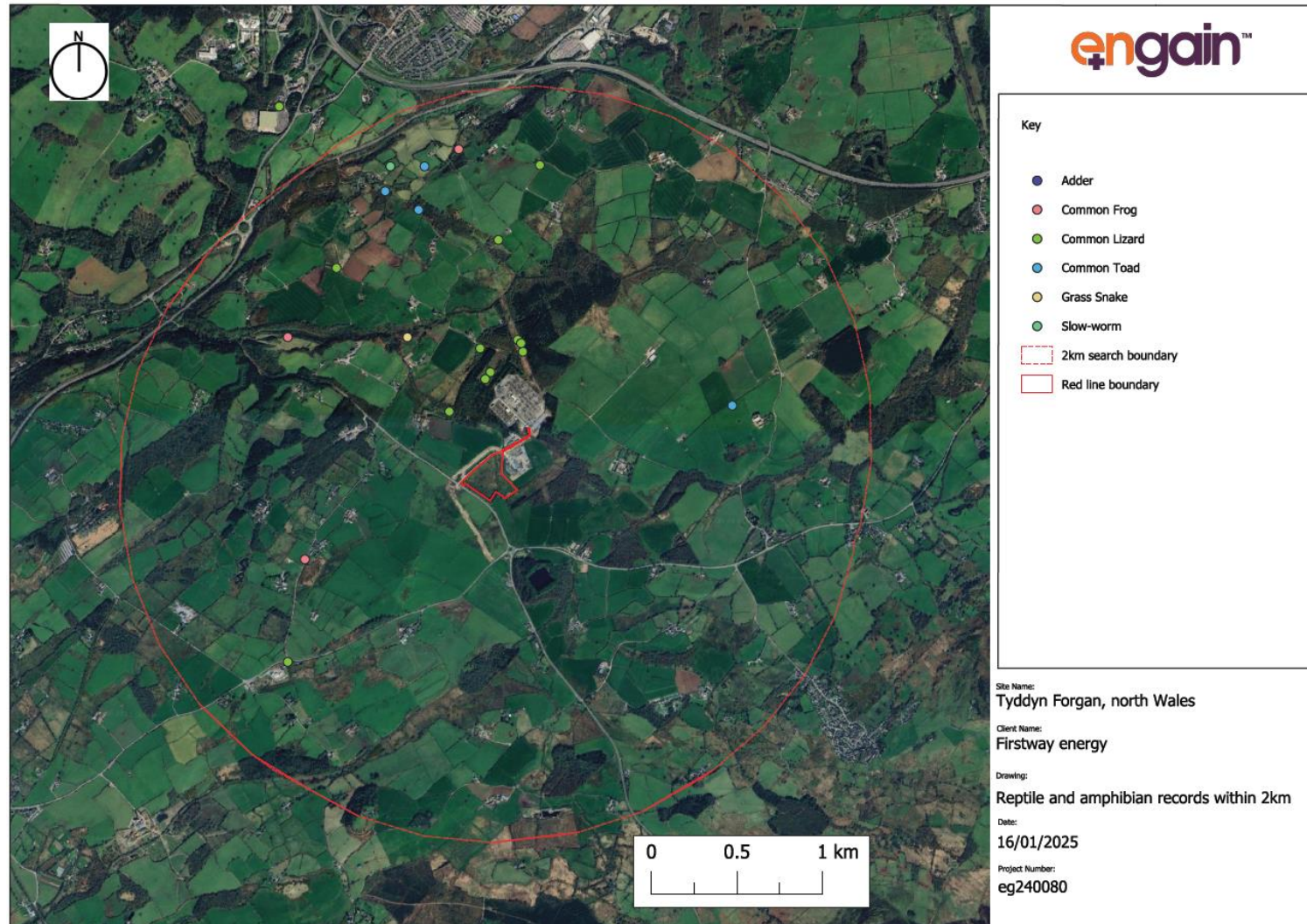
Figure 15, "Locations of Common Lizards Recorded During Surveys in 2024"



Amphibians

- 4.15. There are no water bodies suitable for breeding amphibians on or adjacent to the site. The only amphibian in the data search is common toad (*Bufo bufo*), all other species are assumed to be absent.
- 4.16. Considering the distribution of the desktop records and the absence of suitable breeding ponds it is unlikely that amphibians use the site.

Figure 16, "Reptile and amphibian records within 2km"



Other Mammals

4.17. The record centre returned 81 records of mammals (excluding badgers and bats) within the Hedgehogs have been recorded from the site, and the following species have been recorded within 2km:

- **Hare**
- Otter
- **Polecat**
- **Stoat**
- **Harvest Mouse**
- Red Squirrel
- Water Vole
- **Weasel**
- **Grey Squirrel**

4.18. There are no habitats suitable for otters, water voles or red squirrels within the site boundary, but the remaining species (highlighted in **bold** in the list above) could use the site.

4.19. The Prosiect Bele'r Coed Gwynedd / Gwynedd Pine Marten Project aims to reintroduce pine martin into the Gwynedd area. Pine martins are found in a density of 0.3 to 1.5 adults per square kilometre. There is potential for pine martins to be present in the adjacent woodlands in low numbers however, there is no suitable habitat on the site itself.

Figure 17, "Mammal Records within 2km of the Site"



Invertebrates

4.20. The data search returned 12 records of butterflies, three moth and five other invertebrates records all within 2km of the site. There are records of marsh fritillary butterflies within the 2km data search, however there were only two or three scattered plants this species' food plant – devil's-bit scabious (*Succisa pratensis*) on the site. Considering the species' range and the quality of the habitats it is not likely to use this site.

Invasive Species

4.21. No invasive species were recorded during the habitat surveys.

4.22. The desk study returned 127 records of invasive species within 2km of the site. Of these 103 species are on the WCA schedule 9 (in bold). The species found within 2km include:

- Lesser Periwinkle
- Butterfly-bush
- **Canada Goose**
- **Canada Goose**
- Cherry Laurel
- Cherry Laurel
- *Crangonyx pseudogracilis/floridanus*
- **Emperor Goose**
- **Grey Squirrel**
- **Himalayan Balsam**
- **Himalayan Balsam**
- *Hyacinthoides non-scripta x hispanica = H. x massartiana*
- **Japanese Knotweed**
- Least Duckweed
- Lesser Periwinkle
- **Montbretia**
- New Zealand Willowherb
- **Rhododendron ponticum**
- Sitka Spruce
- **Snow Goose**
- Spanish Bluebell
- Spanish Bluebell
- **Wall Cotoneaster**

5. EVALUATION

Predicted Ecological Impacts

Habitats

- 5.1. In the absence of any avoidance, mitigation or compensation, the installation of the proposed ESS would result in the temporary loss of approximately 1.4ha of marshy grassland. This would equate to around 0.004% of the total amount of this habitat type in Wales, and around 0.5% of the total amount in Gwynedd¹. The effect would not be ecologically significant at the National or Regional level but is potentially significant at the Local or Site level. It would be reversible once the site is decommissioned, subject to the implementation of a suitable habitat restoration plan.

Birds

- 5.2. In the absence of any avoidance, mitigation or compensation, birds nesting in shrubs or on the ground could be killed, injured or disturbed during construction of the proposed ESS, and their nesting and foraging habitat would be removed for the lifetime of the project. Considering the size of the site, this would only be likely to affect one or two pairs of any given species, most of which are also to be found nesting amongst similar habitats across the local landscape. This would likely be significant at the Site or Local level, and the effect (the reduced breeding numbers / number of hatched chicks) might have an impact on local populations for one or more generations. The loss of habitat would be reversible once the site is decommissioned, subject to the implementation of a suitable habitat restoration plan.
- 5.3. The installation of the perimeter fence will create additional perches from which predators such as corvids may prey upon nesting birds. This would be an adverse effect significant at a Site level, that would persist for the lifetime of the project.

Common Lizards

- 5.4. In the absence of any avoidance, mitigation or compensation, it is possible that small numbers of common lizards would be killed or injured during construction. The footprint of the development does not overlap substantially with the distribution of common lizards at the site, so it is likely that the population would persist and, all else being equal, numbers would recover in the long-term. The effect would therefore be significant at a Site or Local level but not beyond.

Avoidance, Mitigation and Compensation

- 5.5. The risk of adverse impacts on wildlife during construction can be managed by the implementation of standard good practices on site.
- 5.6. Prior to the removal of grassland an ecologist should check the site to check for badger activity or other signs of protected species.
- 5.7. Common lizards will be removed from the construction zone prior to vegetation clearance. Capture and translocation of reptiles will only commence when reptiles are active (April to October) during suitable weather conditions. The designated safe receptor area is recommended as the stone wall at the southeast of the site.
- 5.8. Prior to construction, reptile exclusion fencing should be placed around any construction zones. Vegetation within the construction zones will be strimmed to a minimum height of 150mm using handheld equipment such as a strimmer, under the supervision of a suitably experienced ecologist.
- 5.9. Dismantling of suitable refugia within or adjacent to the construction area (such as rubble or debris piles) will avoid the gravid period (May to July) and will be supervised by a suitably qualified ecologist. Any individuals found during this exercise will be removed to a safe location. This will be completed under the supervision of a suitably qualified ecologist. Vegetation clearance and topsoil scraping will take place during periods of fine and warm weather (above 10°C with little rain) under the supervision of a suitably qualified ecologist. It will be carried out in a sensitive and phased manner (with a period of 48 hours between phases), to make habitats less suitable for reptiles and encourage independent movement away or to installed refugia where they can be captured and translocated to the receptor site:
 - Phase 1 - An initial cut of the rough grassland will be undertaken to reduce the vegetation height down to a minimum of 150mm above ground and remove all arisings from the construction footprint.
 - Phase 2 - A second directional cut will be undertaken with vegetation cut to 50mm/ground level and remove all arisings from the construction footprint.
 - Phase 3 - Soil scrape

¹ Figures taken from the Gwynedd Rhos Pasture Habitat Action Plan

- 5.10. All vegetation clearance will occur outside of nesting bird season to minimise disturbance to birds. Where this is not possible, a check for nesting birds will occur within 48 hours of the works taking place. If any evidence of active nesting or nesting attempts are found, a suitable exclusion zone (size to be determined by the ecologist) will be implemented around the nest to protect it until nesting or the nesting attempt is completed.
- 5.11. The proposed landscape strategy has been designed to ensure that the development will deliver Net Benefits for Biodiversity on site, which can be secured through long-term management funded and delivered by the ESS operator.
- 5.12. The retained habitats will be managed to improve their biodiversity value, within the following guidelines:
- Aim to maintain rush cover of around 30%
 - Avoid drainage or lowering of the water table, to prevent drying out of damper areas and micro-climates
 - Avoid using heavy machinery in wet conditions, to prevent soil compaction that favours rush-dominance
 - Top the field and (ideally) remove the arisings, after birds have finished nesting (usually by late August)
 - Allow some cover of gorse and other shrubs, over not more than 20% of the area

Table 6, "Stepwise approach"

Step	Approach
Avoid	<p>Habitats The layout of the site has been designed to avoid the higher quality areas of marshy grassland where possible, but this is limited by the requirements of the site access and infrastructure.</p> <p>Birds Site clearance of habitat suitable for nesting birds would be completed outside of the nesting season (generally March to August inclusive). If this is not possible then the site would first be surveyed, and any active nests would be left undisturbed until the young have fledged.</p> <p>Common Lizards Common lizards would be removed from the construction zone prior to vegetation clearance.</p>
Minimise	The size of the development has been kept to the minimum necessary to meet the engineering requirements.

Step	Approach
Mitigate / Restore	<p>The application boundary includes additional land around the development footprint. This retained grassland will be managed to enhance its ecological value.</p> <p>Log piles will be provided to create sheltering and basking areas for common lizards</p>
Compensate on Site	<p>Bird nesting boxes will be installed in the retained trees around the edge of the site, and surface water management will be combined with the creation of scrapes for wetland and wading birds.</p>
Compensate off Site	<p>Once the above steps are implemented there would be a Net Benefit for Biodiversity on site and no requirement for off-site compensation.</p>
Refuse Planning Permission	<p>Subject to the proposed measures being secured, the proposals will meet the relevant legislation and policy requirements such that there would be no need to refuse planning permission on ecological grounds.</p>

