



# MAES BACH ENERGY STORAGE SYSTEM, PONTYPRIDD

## Ecological Impact Assessment

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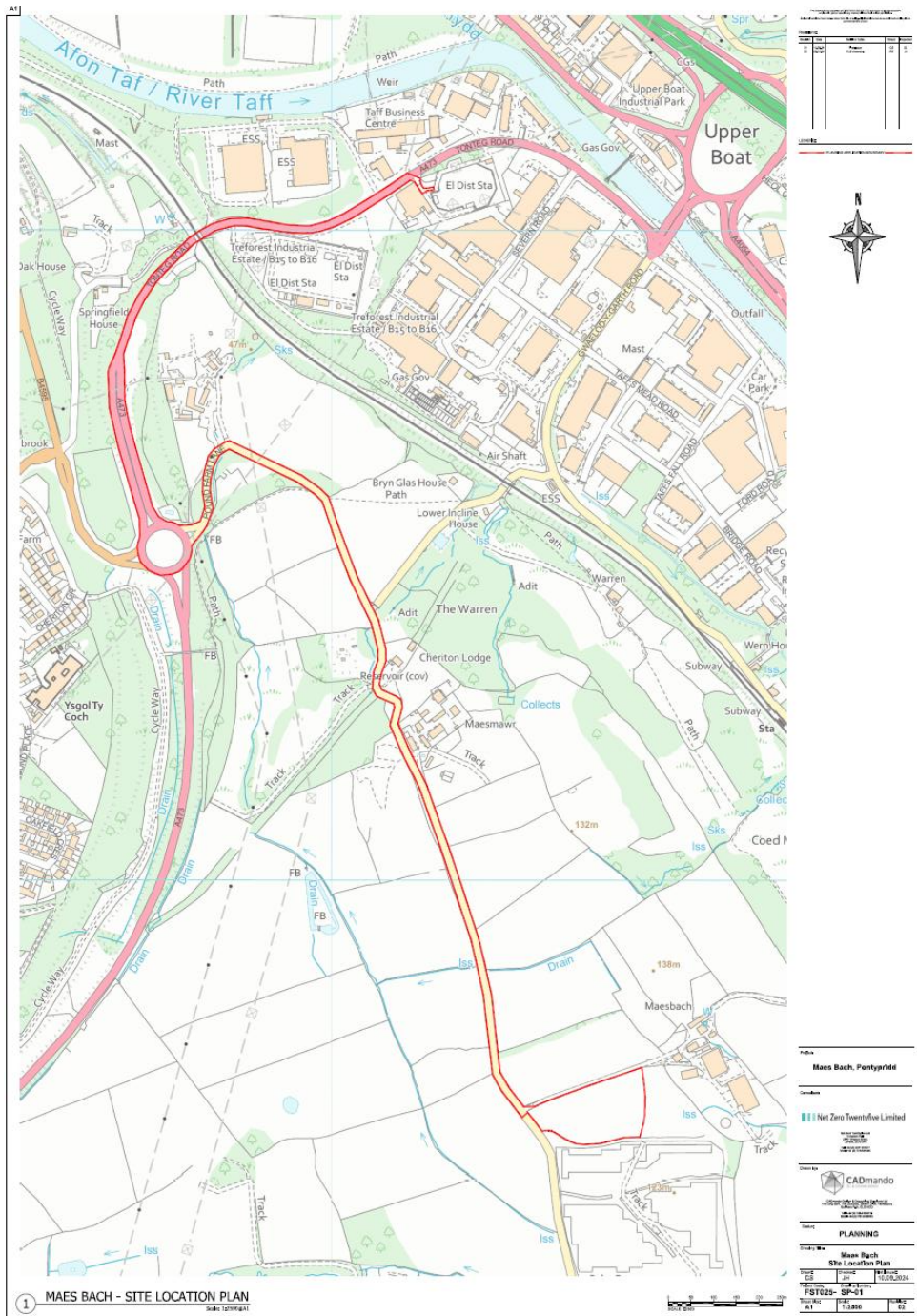
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# 1. INTRODUCTION

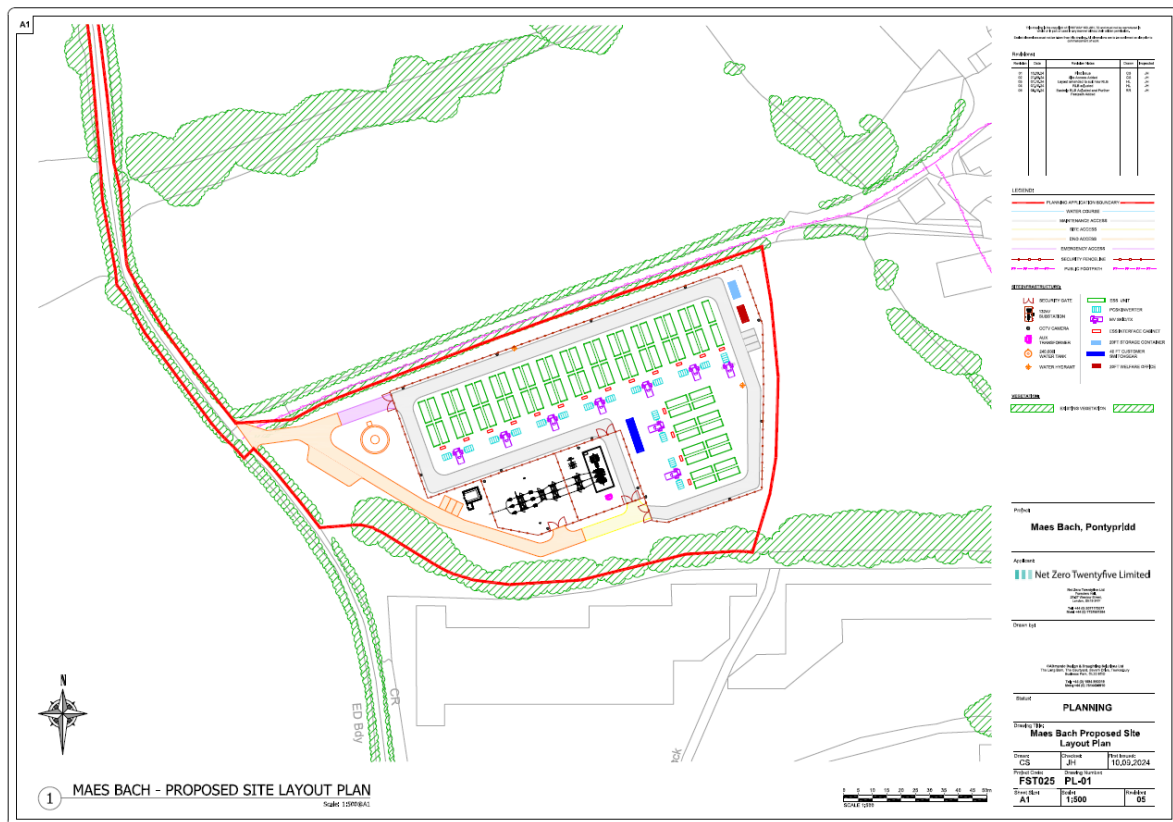
1.1. Engain was commissioned by Firstway Energy on behalf of Net Zero Twentyfive Ltd to undertake an Ecological Impact Assessment of a proposed Energy Storage System on a site at Maes Bach in Pontypridd.

Figure 1, "Location of the site"



- 1.2. The location of the site can be seen in **Figure 1**. The site comprises sheep-grazed grassland surrounded by hedges and treelines. The Ordnance Survey grid reference for the site is ST10448565.

**Figure 2, "Proposed Site Layout"**



- 1.3. The proposed development includes energy storage units, new access tracks and hardstanding.
- 1.4. The scope of this assessment is based upon the Guidelines for ecological impact assessment in the UK, published in 2018 by the Chartered Institute of Ecology and Environmental managers (CIEEM).
- 1.5. The purpose of this report is to 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 sites and habitats within the search area, as well as a field survey of the site.

## 2. LEGISLATION AND PLANNING POLICY

2.1. The principal 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- *The Natural Environment and Rural Communities (NERC) Act 2006*, superseded in places by: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’ so 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, 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:

- Diversity
- Extent
- Condition
- Connectivity
- Adaptability 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 Rhondda Cynon Taf Local Development Plan 2006 – 2021. Rhondda Cynon Taf County Borough Council are preparing a Revised Local Development Plan for the period 2022 – 2037.

### 3. METHODOLOGY

#### Desk Study

- 3.1. Southeast Wales Biodiversity Records Centre (SEWBReC) was contacted on the 8<sup>th</sup> of October 2024 to gain biological records concerning both species and habitats within a 2km radius of the centroid grid reference.

#### Field Survey

- 3.2. A habitat survey was undertaken on the 24<sup>th</sup> of September 2024. This consisted of a survey of the site's 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'.
- 3.3. The site was also searched for signs of protected species such as badgers, and assessed for its potential to support protected species.
- 3.4. The survey also included a search for any invasive plant species such as *Impatiens glandulifera* or *Reynoutria japonica*.

#### Zone Of Influence

- 3.5. 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.
- 3.6. 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.
- 3.7. The habitat survey area comprised primarily the site. However, adjacent land was viewed where possible.

#### Important Ecological Features

- 3.8. This report provides an assessment of whether the site supports, or is likely to support, 'important ecological features' as defined in the CIEEM guidance.

3.9. The main criteria on which important ecological features are identified include diversity, naturalness, and extent.

3.10. The following geographical frame of reference is also used:

- International and European
- National (Wales)
- Regional (Mid Glamorgan)
- Local (Rhondda Cynon Taf)

### **Limitations**

3.11. Engain cannot verify the accuracy of third-party information.

3.12. 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.

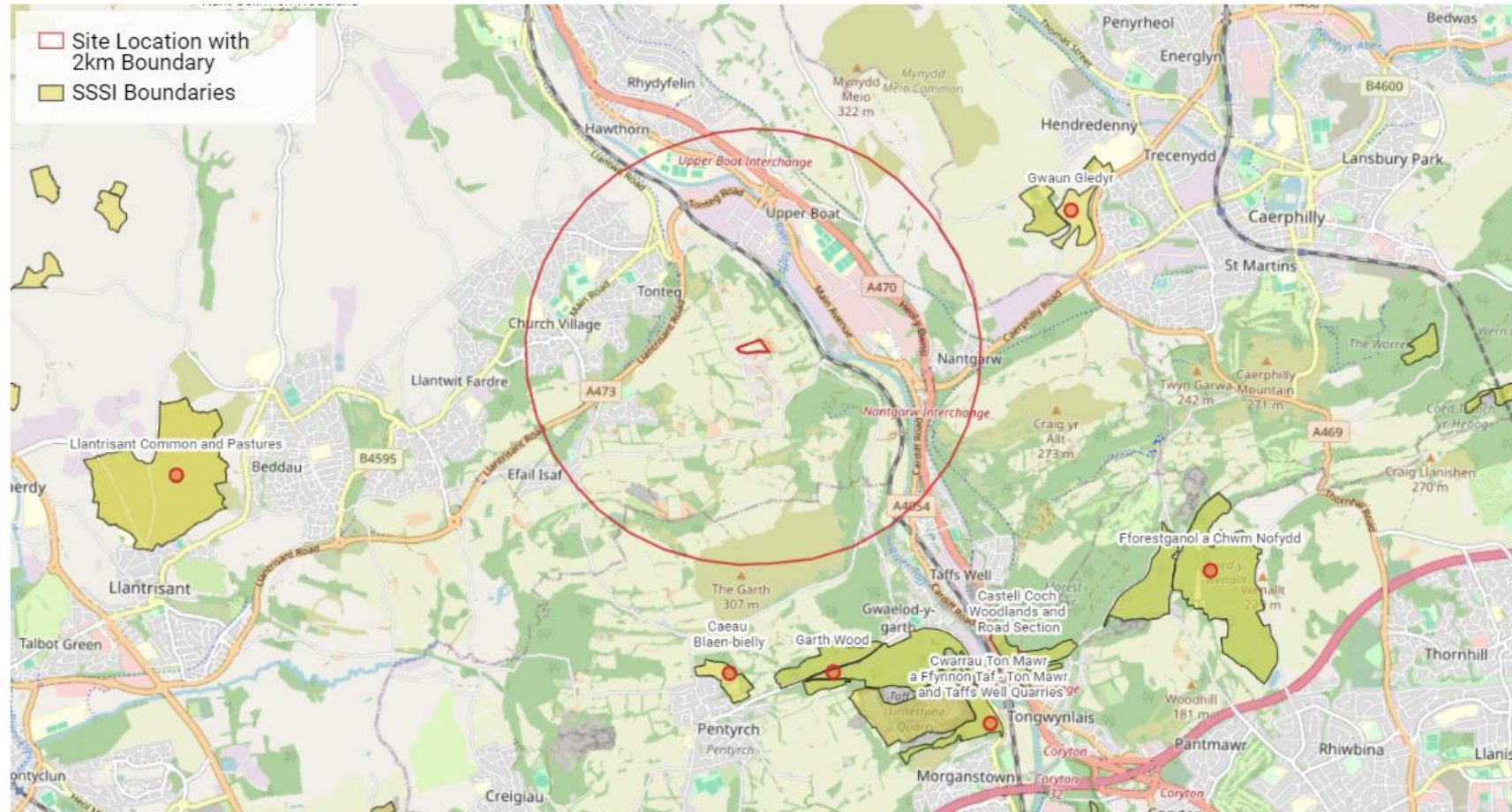
3.13. The survey was conducted late in the season for a botanical survey, but it was carried out by a competent and experienced botanist. Some plant species would therefore not have been evident and a comprehensive list cannot be compiled, but it was still possible to accurately identify the plant communities and habitat types, sufficient for the purposes of this report.

## 4. BASELINE RESULTS

### Designated Sites

- 4.1. There are no statutory or non-statutory designated sites within 2km of the proposed ESS site. The nearest statutory designated site is Gwaun Gledyr Site of Special Scientific Interest (SSSI), located approximately 2.7 km to the north east of the proposed ESS Site and 2.9 km to the east of the carriageway/cable route (**Figure 3**).
- 4.2. The SSSI is designated for its “*extensive area of marshy grassland and smaller area of neutral grassland. The habitats are also associated with smaller areas of acid flush, wet heath, acid grassland and scrub habitat*”.

Figure 3, "SSSI Close to the Proposed ESS Site"



Produced on Oct 24, 2024.  
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1000 m  
Scale 1:50000 (at A4)  
N

## Habitats

- 4.3. The grassland on which the proposed ESS would be located is overwhelmingly dominated by perennial rye grass. The only other species that are at all common in the sward are yarrow (which is abundant throughout), white clover, chickweed and the occasional dandelion. The sward is uniformly sheep-grazed to a height of less than 10cm. The grassland is referable to the NVC type **MG7 *Lolium perenne* leys and associated grasslands**, or the UKHabs type **g4 Modified Grassland**. It appears to be on relatively damp, circum-neutral soils, and under less intensive management would probably develop into a rush pasture such as the NVC type MG10 *Holcus lanatus*-*Juncus effusus* rush pasture, which is present in nearby fields.
- 4.4. The hedge along the northern edge of the site, which runs parallel with a hedge on the other side of the farm track, comprises a box-cut hedge approximately 1.7m tall and 1.5m wide. It is a species-rich hedge with hawthorn, hazel, pedunculate oak, hazel and sycamore. The field-layer is dominated by a carpet of ivy, but there is no hedge-margin vegetation – the grazed pasture and farm track run up to the base of the hedge on both sides.
- 4.5. The road hedge, along the site's western boundary is also a box-cut hedge approximately 1.7m tall and 1.5m wide, which is a continuation of the hedge along the farm track.
- 4.6. The southern edge of the site consists of a line of mature trees including pedunculate oak, hawthorn, beech and alder. There is no shrub-layer or under-storey vegetation, and it is probably an outgrown hedge that has not been managed as a hedgerow for some years.
- 4.7. The route of the cable connection along the existing road passes between some stands of ancient semi-natural woodland. As the proposed works will be entirely within the existing roadway and managed under an Arboricultural Impact Assessment, no impacts are anticipated.

Figure 4, "Baseline Habitats Plan"



## Protected Species

- 4.8. There were no signs of badgers or other protected species evident during the field survey.
- 4.9. There were 14 records of bats within 2km of the site in the data provided by SEWBRcC, including Whiskered, Noctule, Pipistrelles and Brown long-eared bats. There is no habitat suitable for bats to roost within the development footprint. The hedges and fields are likely to be used by foraging bats, albeit the fields are not species-rich grassland and will therefore have only a limited abundance and diversity of insect prey.
- 4.10. There were 91 records of birds within 2km of the site, 53 of which species are Priority Species. The closest records were of starlings, wrens, willow warblers and swallows. The open field, with its closely-grazed sward, is not suitable for ground nesting birds. The hedges will be used by a range of species for foraging and nesting, although because the hedges are tightly cut they will not produce large berry crops or attract the larger volume and diversity of insect prey associated with less intensively managed hedges.
- 4.11. There are eight records of reptiles and amphibians within 2km of the site, but no records of great crested newts. There is a pond within the Maes Bach solar farm, approximately 250m south of the ESS site boundary. This pond was surveyed prior to construction of the solar farm and no great crested newts were present. The open field within the proposed ESS site is of little value for reptiles or amphibians as there is nowhere for them to shelter from predators or unfavourable weather. The hedge bases could be used by commoner species such as frogs and toads but are unlikely to be important for reptiles.
- 4.12. There were 71 records of invertebrates within 2km of the site, 12 of which are species of local importance. The sites habitats are not likely to support any notable invertebrates.
- 4.13. There is one record of hazel dormouse within 2km of the site. The record is from Ty Rhiw, to the east Taff's Well in a heavily wooded area of landscape. The hedges around the proposed ESS site are not connected to large areas of woodland and are not managed favourably for dormice.

## 5. EVALUATION

### Important Ecological Features

- 5.1. The most ecologically important feature of the site of the proposed ESS is the hedgerow that runs along the northern and western boundaries. Hedgerows are a Priority Habitat listed on Section 7 of the *Environment (Wales) Act 2016*.
- 5.2. The grassland within the proposed ESS site is ecologically of very limited value and it is a type of grassland that is very widespread in the surrounding landscape. It is not important for any protected or notable species. Some wildlife such as bats, amphibians or birds may use the hedges for foraging, commuting or sheltering, but they have limited connectivity and are not managed specifically for wildlife value.

### Predicted Ecological Impacts

- 5.3. In the absence of any measures to avoid, mitigate or compensate for ecological impacts, the installation and operation of the proposed ESS would have the following ecological impacts:
  - Loss of approximately 1ha of agriculturally improved grassland of less than 'local' ecological value. This would have an adverse, permanent but negligible ecological impact.
  - Loss of approximately 18m of existing hedge to create the new access off the existing road. The hedges are of high ecological value (by virtue of their designation as Priority Habitats), and this would have an adverse, permanent ecological impact that would be significant at a Local level.
  - Potential for the disturbance of nesting birds or the destruction of active nests if the hedge were to be removed in the nesting season. This would have an adverse, temporary ecological impact that would be significant at a Local level, which would be reversible over a relatively short period of time *i.e.* any species affected would likely recover their pre-development population size and distribution within one to three years.

### Stepwise Approach

5.4. The proposed development's stepwise approach to biodiversity is illustrated in the table below. The proposed ESS would not have any ecological effects at the most serious level *i.e.* there would be no impacts on designated sites. In broad terms the proposal is well-sited, as it is on land of the most limited ecological value. It will require the removal of part of a hedgerow and this must be the focus of efforts to minimise and mitigate ecological effects.

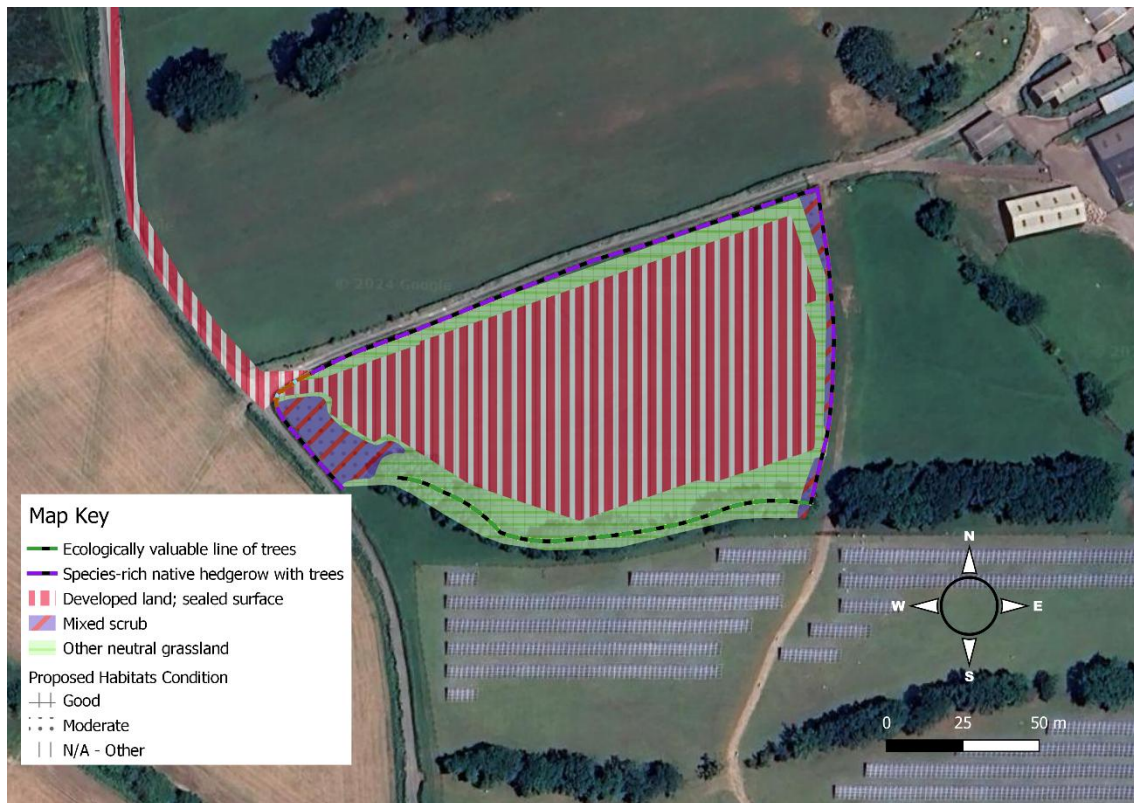
**Table 1, "Stepwise Approach"**

Step	Approach
Avoid	The potential impact on nesting birds can be avoided by timing the hedge clearance works to occur outside of the nesting season, <i>i.e.</i> in the period between September and February (inclusive).
Minimise	The ecological effect of removing a section of hedge can be minimised by: <ul style="list-style-type: none"> <li>- Managing the retained section of hedge to improve their <b>Diversity</b> and ecological <b>Condition</b></li> <li>- Creating new habitats to improve the <b>Connectivity</b> and <b>Extent</b> of hedges and their <b>Adaptability to Change</b>.</li> </ul>
Mitigate / Restore	The residual ecological effect of the proposed hedgerow removal can further be mitigated by restoring the line of trees along the southern edge of the site to be a <b>Connected</b> linear feature, with an improved shrub-layer and <b>Diversity</b> of species.  The creation of new areas of scrub and species-rich grassland will create integrated habitats that are ecologically connected and more resilient to change.
Compensate on Site	The ecological effect of hedge removal can also be compensated by creating a new length of hedgerow along the eastern edge of the proposed ESS site.
Compensate off Site	Once the above steps are implemented there would be a Net Benefit for Biodiversity on site and no requirement for off-site compensation.
Refuse Planning Permission	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.

## NBB and DECCA

- 5.5. 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. An illustrative plan of the proposed habitats is provided in **Figure 4**. The landscape proposals include the following features:
- A new hedgerow along the eastern edge of the site
  - New areas of mixed shrub planting alongside new and retained hedges
  - Species-rich grassland adjacent to the ESS
- 5.6. These benefits can be delivered using proven solutions that have been replicated frequently and are within the capabilities and resources that will be available post-development. Hedge planting is a very straightforward process, for example using staggered double-rows of whips planted at approximately 60cm centres. This can generate good results as long as the whips are sufficiently cared for in the first few years after planting – protecting them from browsing and weed growth where necessary and ensuring they are watered during any excessive periods of low rainfall. Mixed species scrub can also be created with relative ease, either through planting of whips, allowing natural spread of hedgerow shrubs and animal-deposited propagules or a combination of the two. New growth needs protecting in the same way as any new hedge planting.
- 5.7. The proposal to create species-rich grassland around the edges of the site can also be achieved through a combination of intervention and natural succession. Once sheep grazing is removed, rushes and robust forbs will rapidly increase their cover. This can create increased diversity initially but prevent the establishment of greater botanical diversity if left unchecked. In the first year it may be appropriate to harrow and over-seed the sward with a mix of species including some hemi-parasites and some robust wildflowers. Thereafter the ongoing management will need to be tailored to the results, with cutting in spring, late summer or early winter as needed.

Figure 5, "Proposed Habitats Plan"



5.8. An assessment of the proposals' impact on the resilience of ecosystems is provided in **Table 2**, below, following the DECCA Framework. Whilst the small scale of the site means that its impacts (positive and negative) are not truly at an ecosystem scale, the contribution to the wider natural environment in which it sites (i.e. a landscape of pasture fields bounded by hedgerows) is illustrated in the table.

Table 2, "DECCA Framework"

Framework	Contribution
Diversity between and within ecosystems	The proposals will increase the biological diversity of the site, by introducing new habitats (species-rich grassland and scrub). This will contribute in a small way to the local hedgerow network
Extent or scale of ecosystems	The proposals provide a small but measurable net increase in the amount of hedgerow habitat along with the proposed species-rich grassland and scrub
Condition of ecosystems including structure and functioning	The condition of the retained hedgerows will be improved by allowing them to grow taller and cutting them less frequently. This will allow flowering and

Framework	Contribution
	fruiting on second-year growth, which will promote their function as a resource for a range of wildlife such as bats and birds.
Connections between and within ecosystems	The proposed new hedge along the eastern edge of the site, and the enhancement of the line of trees along the southern edge, will create improved habitat connectivity
Adaptability of ecosystems	Semi-natural habitats, created and maintained using locally-appropriate native species, will be more resilient to the pressures of climate change and other anthropogenic pressures such as air and water pollution

5.9. While Biodiversity Net Gain (BNG) is not a mandatory requirement in Wales, this assessment uses the Defra Biodiversity Net Gain metric to demonstrate the net ecological benefits achieved by the project. The metric results indicate a net gain in habitats and hedgerows of more than 10%, providing an indication of the scale of positive impact on biodiversity. An extract of the headline results from this assessment is shown below:

Figure 6, "Quantative Indication of NBB"

FINAL RESULTS		
<b>Total net unit change</b> <small>(Including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	0.64
	<i>Hedgerow units</i>	0.70
	<i>Watercourse units</i>	0.00
<b>Total net % change</b> <small>(Including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	23.22%
	<i>Hedgerow units</i>	15.81%
	<i>Watercourse units</i>	0.00%
<b>Trading rules satisfied?</b>	Yes ✓	

### Precautions During Construction

- 5.10. The risk of adverse impacts on wildlife during construction can be managed by the implementation of standard good practices on site.
- 5.11. Prior to the removal of grassland an ecologist should check the site to ensure that no protected species have colonised the site. This will include a check for badgers on the site and within 30m where access allows.
- 5.12. The creation of the new access through the hedge would occur outside of nesting bird season. If works must occur during this time, the hedge would first be checked for nests by a suitably qualified ecologist. If any active nests are found, a suitable buffer will be determined by an Ecological Clerk of Works, until the young have fledged and the nest is no longer active. The section of hedge should be cut back in a phased manner to allow wildlife to disperse. The top growth should be removed first, down to a height of approximately 150mm, and this area left for 24 hours before returning to remove the lower growth. The hedge base should be checked for wildlife by a suitably qualified ecologist, before the stumps and earth is removed.



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