LDĀDESIGN

Castle Road Battery Energy Storage System (BESS)

Landscape and Ecological Management Plan (LEMP)

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This document has been prepared and checked in accordance with ISO 9001:2015.

1.0 Introduction

This Landscape and Ecology Management Plan (LEMP) has been prepared by LDA Design and BSG Ecology to accompany the planning application for a proposed Battery Energy Storage System (BESS) with a capacity of up to 440MW on land north of Castle Road, Burton, Rhoose within the Vale of Glamorgan Council (VoGC) administrative area.

The purpose of the LEMP is to provide further details regarding the management objectives and programme of works during the construction and operational lifespan of the proposed development. The LEMP can then be secured by condition as part of the planning permission to ensure the delivery and management objectives of the key elements of the embedded mitigation as outlined within the Planning, Design and Access Statement (PDAS), Landscape and Visual Impact Assessment (LVIA) and Green Infrastructure Statement (GIS).

Detailed planting plans and specifications will be provided following planning permission subject to a condition and in accordance with the objectives and prescriptions of this LEMP.

The LEMP has been produced with reference to the Biodiversity – Code of Practice for Planning and Development British Standard: BS 42020:2013 (BSI Standards Limited, 2013) and in particular, Section 11.1 which provides details on the content of management plans.

1.1. Structure of the LEMP

The LEMP is structured as follows:

- **Section 1:** Provides an introduction and sets out the structure of the LEMP.
- **Section 2:** Describes the landscape and ecological value, habitats records and species present within the BESS and the high voltage substation compounds.
- **Section 3:** Details the scheme description.
- **Section 4:** Sets out the management objectives.
- **Section 5:** Details the management works.
- **Section 6:** Provides the roles and responsibilities for implementation and monitoring.

1.2. Associated Documents

This LEMP has been informed with reference to the following drawings and reports:

- Castle Road BESS Design (Windel dwg. WIN-BES-08-DR-03-03-01)
- Proposed Levels Plan (Campbell Reith dwg. 14171-CRH-XX-DR-C-5000-P3)
- Landscape Plan (LDA Design dwg. 8919_100)
- Landscape and Visual Impact Assessment (LVIA) by LDA Design (Feb 2025)
- Ecological Impact Assessment (EcIA) by BSG Ecology (Feb 2025)
- Arboricultural Report and Survey BS5837:2012 by Sylva Consultancy (Feb 2025)

2.0 Site Description

The Site comprises approximately 10.5 ha of agricultural land, located adjacent to Burton and approximately 650m to the north of East Aberthaw. The Site is bounded by the B4265 highway and a strip of woodland along its northern edge. Aberthaw Quarry is directly to the south. To the west, there are a number of properties on Fontygary Road beyond which lies the Aberthaw Cement Works. A pylon and overhead line cross the Site from the north-east to the south-west. In the wider area, the decommissioned Aberthaw Power Station is 1.5km to the south-west, Cardiff Airport 1.8km to the east, and an existing 5.56MW solar farm, known as West Hall Solar Farm, is approximately 1km to the west.

The Site comprises agricultural fields classified as Grade 4 and 3b land under the Agricultural Land Classification (ALC). The Site is currently used for agricultural purposes and is accessed from existing field gates in the hedgerow boundary on Fontygary Road to the west, Castle Road to the south, and an unnamed track to the east. A Public Right of Way (PRoW P4/5/1) crosses through the Site from the north-west to south-east.

The Site is sloping in nature and located within a non-statutory Special Landscape Area (SLA) designation as well as a Mineral Safeguarding Area, Quarry Buffer Zone and Aviation Safeguarding Zone. The Site is not subject to any other historic, environmental or landscape designations. The Site is in Flood Zone A of low risk of fluvial and tidal flooding.

2.1. Surveys

Baseline field surveys were carried out as part of the LVIA in November 2024 to understand the context of the Site and cable route. The fieldwork for the LVIA was undertaken in November 2024 without full leaf coverage in accordance with best practice.

Phase 1 habitat surveys of the Site were undertaken by BSG Ecology between June 2023 and April 2024 and these are contained within the Ecological Impact Assessment (EcIA) undertaken by BSG Ecology (Feb 2025). The EcIA provides a description of the habitats and records the potential presence of Protected Species and/or Species of Conservation Concern within the Site.

2.2. Ecology Designations

The Proposed Development is not located within any statutory or non-statutory ecology designations. The following ecology designations are located within the surroundings of the Site:

- **East Aberthaw Site of Special Scientific Interest (SSSI**) – designated due to its coastal habitats including limestone cliffs, shingle spits, saltmarsh and relict sand dunes – 1.4km south.
- **Castle Wood Site of Importance for Nature Conservation (SINC)** – comprising two areas of ancient semi-natural woodland with veteran trees. Species include pedunculate oak, ash, beech, sycamore and elm. The understory is comprised of holly, hazel, elder, and spindle. The woodland floor is carpeted with bluebell, dog's mercury, primrose, wood anemone and toothwort. The woodland is rich in mosses and lichens, including the large lungwort. The breeding bird assemblage includes

great spotted, lesser spotted and green woodpecker, treecreeper, nuthatch, redstart, pied and spotted flycatcher. Resident birds of prey include sparrowhawk, buzzard and tawny owl. The floodplain grassland below the wood holds numbers of roosting wildfowl including goosander, mallard, pochard, shoveler, teal, tufted duck with pintail, whooper swan and wigeon, in winter. Butterflies are well represented, including comma, silver-washed fritillary and speckled wood and mammals include fallow deer and badger – 190m north.

There are 24 no. non-statutory ecological designations and 12 no. priority habitats within approximately 2km of the Site. The closest SINC is Castle Wood (described above) which is approximately 190m to the north separated by the B4265 highway. Open mosaic and scrub habitats within the Aberthaw Quarry to the south of Castle Road are the closest priority habitats.

Table 1 summarises the existing habitats identified within the Site. Existing habitats are further described within the Ecological Impact Assessment (Ref. BSG Ecology, 2025).

Table 1: Summary of Existing Habitats within Site

Habitat Type	Location	Comment
Arable	Southern Field	The majority of the southern field is a large area of arable land, cultivated for rapeseed *Brassica napus*. Frequent forget-me-knot *Myosotis* sp. and occasional cut-leaved crane's-bill *Geranium dissectum* are found in addition to speedwell *Veronica* sp., swinecress *Coronopus squamatus*, barley *Hordeum vulgare* and wheat *Triticum* sp. which are observed rarely in-between the crop.
Neutral grassland	Northern Field	This is the main habitat type of the northern field and can also be seen in small areas of the southern field along the field boundaries although species composition varies. Species includes Yorkshire fog *Holcus lanatus* as the dominant grass, followed by perennial rye grass *Lolium perenne* (abundant), crested dog's-tail *Cynosurus cristatus* (frequent) and foxtail *Alopecurus* sp. (abundant). Creeping buttercup *Ranunculus repens* was also frequently observed.
Field margins		Field margins of both fields vary between 0.5-1.5 m in width and consists mostly of grasses. Species include Yorkshire fog (abundant), creeping bent *Agrostis stolonifera* (abundant), crested dog's-tail

		(abundant), cocksfoot grass *Dactylis glomerata* (frequent), brome *Bromus* sp. (occasional), perennial rye grass (occasional), lords-and-ladies *Arum maculatum* (rare), sweet vernal-grass *Anthoxanthum odoratum* (rare), spear thistle *Cirsium vulgare* (rare), meadow buttercup *Ranunculus acris* (rare) and false oat-grass *Arrhenatherum elatius* (rare). The following species were seen only on the eastern margins of the southern field including nettle (abundant), curled dock *Rumex crispus* (frequent), willowherb *Epilobium* sp. (occasional), hogweed *Heracleum sphondylium* (occasional) and Timothy grass *Phleum pratense* (rare).
Scrub	Site boundaries (small areas)	There are small areas of scrub within and directly adjacent to the Site boundary. The scrub areas consist mostly of bramble *Rubus fruticosus* although rose Rosa sp., dogwood *Cornus sanguinea* and ash *Fraxinus excelsior* saplings were also present.
Broadleaved plantation woodland	Site (north-east corner)	Woodland consists mostly of Acer sp., *Prunus* sp., silver birch *Betula pendula*, sycamore *Acer pseudoplatanus*, rowan *Sorbus aucuparia*, dogwood, hawthorn *Crataegus monogyna*, field maple *Acer campestre* and horse chestnut *Aesculus hippocastanum* trees. Most trees are relatively young (~20 years). The understory includes species such as ivy *Hedera helix* (dominant), nettles (abundant) and cleavers (abundant).
Scattered Broadleaved Trees	Site	Five mature hawthorn trees are present within the northern field. Due to their maturity, there are features within the trees that result in small crevices that could be used by bats.
Hedgerows	Site	Field boundary hedges comprising predominantly mixed native species including elm, dogwood, hazel, bramble, field maple, bracken *Pteridium* sp, elder (rare), hawthorn (rare) and rose Rosa sp. (rare). Understory of all hedgerows matches the vegetation of the field

	margins of the field they are in and ivy is occasionally present.

2.3. Species

Table 2 below provides a summary of the findings for protected species from the Ecological Impact Assessment (Ref. 2025) undertaken by BSG Ecology:

Table 2: Summary of Protected Species

Species	Comment
Amphibians	There are no ponds on Site. There are two ponds within 250m of the Site boundary within Aberthaw Quarry. At their nearest point the ponds are ~30 m south of the Site boundary. Both of these ponds have very low suitability for GCN because of their size (1.5 ha and 1.3 ha) and their steep banks. No other ponds are present within 250m of the Site. There are approximately six more ponds between 250 – 500m from the Site and are separated from it either by the quarry or major roads. Overall, most of the Site provides low suitability habitats for GCN. The hedgerows, field margins and scrub on Site and in the surrounding landscape provide suitable foraging and connective habitat for GCN and other amphibians to disperse through the landscape.
Badgers	No evidence of badgers were noted on Site. The habitats on Site could be used by foraging and/or commuting badgers. However, they are generally of lower suitability to support sett building with the areas of scrub, woodland and hedgerows having the higher likelihood of use.
Bats	The closest roosts are of Pipistrellus sp., Natterer's bat, lesser horseshoe bat, brown long eared bat and serotine ~1.1 km from the Site. No buildings are present within the Site boundary. There are some trees on Site that offer roosting opportunities for bats. The trees within the woodland adjacent to the Site were not individually assessed. However, the woodland is not expected to be affected by the Proposed Development. The habitats on Site have moderate suitability to support foraging and commuting bats due to the presence of neutral grassland, linear hedgerows, woodland and scrub areas connected to the wider landscape. However, the arable habitat on Site is unlikely to provide a valuable prey resource for bats.
Hazel Dormouse	The closest record is ~1.8 km from the Site in 2009. The Site contains habitat that is suitable for nesting, foraging and

	commuting hazel dormice in the form of woodland, limited scrub and hedgerows which have good connectivity across the Site and to the wider landscape.
Invertebrates	The Site offers low floristic diversity to support a diverse range of invertebrates. Exceptions are the hedgerow, scrub and woodland areas which could support a higher number of common species.
Other mammals	No evidence of activity of any other mammal species were observed during the field survey. Although, the habitats on Site are not highly suitable for any of these species due to their mostly agricultural in nature and lack of woodland/woodland edges, the brown hares, hedgehogs, and harvest mice are likely to occasionally use the Site for foraging and/or sheltering due to their presence on the wider landscape.
Otter	The closest water bodies are the two ponds which are ~ 30 m south of the Site boundary. The River Kenson is ~100 m north west of the Site. Both the ponds and the river are likely to support fish. No evidence of use by otter was noted on Site. Otters may move along the Site (over-ground runs) however, the Site itself is unlikely to have any valuable resources for foraging or holt creation. It is, therefore, unlikely that otters will use the Site.
Protected plants	No protected species listed on Schedule 8 of the WCA 1981 (as amended)/notable flora species were recorded during the survey.
Reptiles	The closest adder record is <500 m from the Site (2009), the closest grass snake record is 1.2 km from the Site, and the closest slow worm record is 140 m from the Site. The Site offers limited foraging and commuting habitat for reptiles in the form of hedgerows and scrub. Although the tall rapeseed crop and hay grassland could provide sheltering opportunities, it is unlikely to be favoured by reptiles due to regular disturbance by the agricultural activities and lack of diversity in the vegetation structure within the Site leading to limited prey resources.
Water Vole	There are no waterbodies within the Site and the habitats on Site do not provide suitable habitat for water voles.
Birds	The closest records are those of red kite *Milvus milvus*, peregrine, reed bunting, linnet *Linaria cannabina*, song thrush, kestrel *Falco tinnunculus* and dunnock *Prunella modularis* approximately 140m from the Site.

2.4. Landscape Designations

The Site does not fall within any statutory landscape designations. The Site is located within the non-statutory Nant Llancarfan Special Landscape Area (SLA) which extends to the north east. The Upper and Lower Thaw Valley SLA is also located to the north-west. Whilst the Site is located local plan SLA, it is separated from the wider geographical area of the SLA designation by the B4265 highway alignment and is within the visual context of the Aberthaw Cement Works to the west and the Aberthaw Quarry to the south.

2.5. Landscape Character

2.5.1. National Landscape Character Areas

The Site is situated within National Landscape Character Area 36, The Vale of Glamorgan, which encompasses a large region from Pen-y-Bont to Barry along the south coast of Wales. Key characteristics of NLCA 36 observed within the Site and study area, are described as:

"A distinctive, gentle lowland landscape, largely comprising a rolling limestone plateau. Glacial till contributes to its undulating topography. A variety of rural land uses characterise the area, reinforced by thick hedgerows, frequent small woodlands and trees, which create a sense of enclosure and intimacy. This is despite the proximity to large towns such as greater Cardiff, Barry and Bridgend, and a number of large built features within the Vale…In the centre of the Vale, compact and historic settlements reinforce the area's distinctive sense of place, but with limited modern development…The registered landscape of Llancarfan is astoundingly beautiful as well as being a relatively unspoiled gem of historical evolution."

Key characteristics of relevance to the Site includes:

- *"Small woodlands – mainly to the east. Few large woods.*
- *Mixed agricultural land uses - with predominantly rural character.*
- *Mixed field patterns and sizes - with hedgerows and hedgebanks, frequent hedgerow trees.*
- *Norman castles and medieval villages centred on churches.*
- *Predominantly still rural - with strong senses of enclosure by historic field boundaries.*
- *A number of large built developments – including Cardiff International Airport and Aberthaw Power Station. Some areas with traffic noise, e.g. in the M4 corridor.*
- *Commuter settlement - modern suburban housing extending but contrasting with historic settlement character."*

2.5.2. Local Landscape Character

The Vale of Glamorgan County Council, Designation of Landscape Character Areas – Background Paper (2008) identifies 27 no. Landscape Character Areas (LCA's) within the County, based on the 5 no. LANDMAP aspects (Geological, Habitats, Visual and Sensory, Historic and Cultural) and provides a description for each area, in addition to management issues.

The Site is located within LCA 4 – Thaw Estuary, which surrounds the estuary of the Thaw river including its convergence with the river Kenson, extending from the Site southwards to the Bristol Channel. LCA 4 is described as an *"area of wave cut platform and estuarine deposits associated with the River Thaw which drains the central Vale landscape and is associated*

with the Thaw and Waycock lowland river systems. Characterised by the locally iconic features of Aberthaw Power Station and quarry."

3.0 Scheme Description

The proposed layout of the battery energy storage units and associated infrastructure is shown on:

- Proposed Layout Plan (Windel dwg. WIN-BES-08-DR-03-03-01)
- Proposed Levels Plan (Campbell Reith dwg. 14171-CRH-XX-DR-C-5000-P3)
- Landscape Plan (LDA Design dwg. 8919_100)

The scheme includes a series of 168 no. single stack battery containers, each measuring 2.9m in height. The containers would be arranged within the southern field with the inverter and transformer units measuring 2.3m in height. In addition to these components, a high voltage substation housing a 33kV to 400kV transformer, three switchgear cabinets and a control room is proposed within a separate compound in the southern field. The proposed harmonic filters, surge arrestor, a disconnector and high level busbars within the high voltage substation compound would have an approximate maximum height of 12m.

The design strategy and embedded mitigation would include:

- Locating the BESS and the high voltage substation compounds within the southern flatter part of the Site to reduce the requirement for ground engineering and landform remodelling.
- Positioning the BESS and the high voltage substation compounds within the southern area of the Site at closer proximity to Castle Road within the visual context of the existing industrial land uses within the Aberthaw Cement Works to the west and Aberthaw Quarry to the south.
- Retention of boundary hedgerows and woodland as far as possible to enhance visual screening particularly from the B4265 highway to the north, the quarry haul road to the east, Castle Road to the south, and Fontygary Road to the west.
- Provision of woodland to the west of the southern field to provide visual screening to residential properties located along Fontygary Road.
- Reinstatement of the partly defunct hedgerow between the northern and southern field to enhance the perceived sense of separation and compartmentalisation.
- Retention and partial diversion of public right of way (PRoW P4/5/1) crossing diagonally through the Site from north-west to south-east between Fontygary and Castle Road.
- Provision of new habitats including native broadleaf woodland, hedgerows, scrub mosaic, neutral grassland, ponds, pond creation and marginal planting.
- Creation of new habitat corridors and 'ecotones' between the BESS and the high voltage substation compounds to consist of a gradation of native woodland, tree belts, open scrub mosaic, neutral grassland, pond creation and marginal planting.
- Provision of treebelts and hedgerow reinforcements to provide additional visual screening along the B4265 to the north, the quarry haul road to the east, Castle Road to the south, and Fontygary Road to the west.

- Provision of scrub mosaic vegetation beneath the pylons and overhead lines within internal areas to replicate habitats and vegetation communities within restored areas of the Aberthaw Quarry tip to the south to enhance biodiversity.
- Provision of hibernacula (log piles) at key locations within the Site to enhance biodiversity for birds, mammals, reptiles, etc.
- Provision of bird, bat and dormouse boxes at key locations within the existing hedgerows and woodlands.
- Allowance of a permissive footpath within the proposed scrub mosaic and neutral grassland area within the north field to link into public footpath (PRoW P4/5/1) to enhance recreational value.
- Replacement and/or making good of the footpath stiles to the north-west and south-east of the Site along public footpath (PRoW P4/5/1).
- Locating the cable route within a narrow trench within the highway verge to avoid the rooting areas of existing trees and hedgerows.

4.0 Management Objectives

This section sets out the management objectives for the key habitats, species and functionality of the embedded mitigation.

The following management objectives are proposed:

Objective 1 – Enhancement of Biodiversity

The biodiversity of the Site will be enhanced. This will primarily be achieved through new habitat creations within the northern and southern field of the Site including proposed native broadleaf woodland, new hedges, scrub mosaic, neutral grassland, pond creation with marginal planting to provide an 'ecotone' and connectivity with existing habitats to the south and north of the Site. The existing boundary hedges and woodland would be retained as far as possible. Bird and bat boxes as well as hibernacula (log piles) would be provided at strategic locations as identified by the consultant ecologist. The enhancements to the biodiversity of the Site are further detailed within the Ecological Impact Assessment undertaken by BSG Ecology (Feb 2025).

Objective 2 – Protection and Enhancement of Characteristic Landscape Features

A strong network of existing habitats and characteristics landscape features are found within the Site including native woodland, treebelts, individual trees, hedges, scrub, rough field margins, and grassland. These physical features will be retained and enhanced within the Proposed Development as far as possible. This is intended to avoid the removal of existing habitats and to provide a landscape framework for visual screening and containment. This will ensure:

- Retention of the existing and historic field pattern during operational lifespan of the development;
- Protection of existing habitats for nesting birds and foraging routes for potential hazel dormice and bats;
- Protection of existing habitat corridors along linear features;
- Protection of the multi-functionality of the landscape with hedgerows, woodlands and wildlife corridors retained; and
- Retention and partial diversion of Public Right of Way (PRoW P4/5/1) and provision of new stiles.

Objective 3 – Creation of a Strong Structural Planting Framework

In addition to the retained field structure and landscape features, further structural planting of woodland and hedgerows is proposed to provide visual enclosure to the Site. This will ensure:

- An enhanced landscape structure and improved green infrastructure corridors, connectivity and 'stepping-stones' across the Site with priority habitats to the north and south;
- Proposed native woodland and hedgerow planting to provide enhanced visual screening around the BESS and high voltage transformer compound in the

southern field including closer proximity views from the B4265 highway to the north, Castle Road to the south, and Fontygary Road to the west;

- Greater connectivity with existing woodland and treebelts along the Site boundaries; and
- Resilience to climate change and flood events.

Objective 4 – Opportunities for the Protection and Conservation of Species

The Proposed Development would seek to provide opportunities for the protection of notable species. The size of the BESS and high voltage transformer compounds provides opportunities for benefiting species of interest as well as creating wildlife corridors between priority habitats, ancient woodlands and SSSI's beyond the Site boundaries. These would include:

- Provision of new habits including native broadleaf woodland, hedgerows, scrub mosaic, neutral grassland, pond creation with marginal planting.
- Creation of new habitat corridors and 'ecotones' between the BESS and the high voltage substation compounds to consist of a gradation of native woodland, tree belts, open scrub mosaic, neutral grassland, pond creation with marginal planting.

Objective 5 – Retention of Public Rights of Way and Permissive Access

A PRoW(footpath P4/5/1) crosses diagonally through the Site from the north-west to south-east between Fontygary Road and Castle Road. This public footpath will be retained although partly diverted to the north and east of the BESS and high voltage transformer compounds. An important objective is to minimise any perceived detrimental impacts of the Proposed Development on the existing PRoW and recreational amenity. This would be addressed by:

- Provision of native hedgerows and woodland around the security fence of the BESS and high voltage transformer compounds to provide visual screening of the Proposed Development within close proximity views;
- Retention of a minimum 5 metre wide footpath corridor either side of PRoW to minimise any perceived channelling/funnelling on the visual experience of public footpath P4/5/1;
- Making good and/or replacement of footpath stiles to the north-west and south-east of public footpath P4/5/1 within the Site; and
- Allowance of permissive access and mown path within the northern field to link into public footpath (PRoW P4/5/1) to enhance recreational value.

5.0 Management Works

This section details the required works to help to ensure the objectives set out in Section 4.0 can be achieved. Works will be undertaken in accordance with the following plans and documents:

- Landscape Plan by LDA Design (dwg. 8919_100)
- Landscape and Visual Impact Assessment (LVIA) by LDA Design (Feb 2025)
- Ecological Impact Assessment (EcIA) by BSG Ecology (Feb 2025)
- Arboricultural Report and Survey BS5837:2012 by Sylva Consultancy (Feb 2025)
- Green Infrastructure Statement by LDA Design (Feb 2025)

All habitat creation requirements will be detailed in specifications for implementation by the appointed contractors/site managers.

5.1. Pre-Construction and Construction

All new planting should be sourced from a reputable UK based provider who are able to demonstrate provenance of planting and adhere to all relevant biohazard controls including LI Technical Note 1/15 Pests and Disease Threats.

All new planting must be certified disease and pest free from the chosen supplier(s). Planting to be undertaken in suitable planting conditions. All new tree planting will be undertaken in accordance with the British Standard BS 8545:2014 *Trees: from Nursery to Independence in the Landscape – Recommendations* document.

Areas of bare earth and scarification as a result of the construction are to be resown with a suitable neutral grassland seed mix with wildflower species to encourage sward diversity.

5.2. Enabling Works

5.2.1. Trees

Minor works to trees such as lateral pruning or crown lifting will be undertaken where required prior to construction to avoid damage to trees by construction activities. Some minor scrub vegetation loss/pruning may also be required. These works will be undertaken by a qualified arborist in accordance with the specification set out within the Arboricultural Report and Survey BS5837:2012 produced by Sylva Consultancy (Feb 2025).

Tree protection fencing will be erected before any construction works begins in accordance with BS5837:2012 *Trees in relation to design, demolition and construction – recommendations*. The locations and alignments of the tree protection fencing is provided within the Arboricultural Report and Method Statement. Where appropriate, the site perimeter security fence shall act as an effective protection barrier but in some locations specific, temporary tree protection fencing is required.

Protection fencing may be erected and dismantled in phases as construction progresses across the BESS and high voltage transformer compounds. Construction of the Proposed Development including the cable route will limit any potential encroachment of Root Protection Areas (RPAs) of existing trees during the construction stages.

5.3. Habitat Creation

The following habitats would be created:

- Provision of new habits including native broadleaf woodland, hedgerows, scrub mosaic, neutral grassland, pond creation with marginal vegetation.
- Provision of woodland to the west of southern field to provide visual screening to residential properties located along Fontygary Road to the west.
- Reinstatement of the partly defunct hedgerow between the northern and southern fields.
- Creation of new habitat corridors and 'ecotones' between the BESS and high voltage substation compounds to consist of a gradation of native woodland, tree belts, open scrub mosaic, neutral grassland, pond creation with marginal vegetation.
- Provision of treebelts and hedgerow reinforcements to provide additional visual screening along the B4265 to the north, the quarry haul road to the east, Castle Road to the south, and Fontygary Road to the west.
- Provision of lower scrub mosaic vegetation beneath the 400kV overhead lines within internal areas to replicate habits and vegetation communities within restored areas of the Aberthaw Quarry tip to the south to enhance biodiversity.
- Provision of hibernacula (log piles) at key locations within the Site to enhance biodiversity.
- Provision of bird and bat boxes at key locations within the existing hedgerows and woodlands.

5.3.1. Operational Management

The management operations during the operational stage of the Proposed Development are provided within Appendix 1. The following general management will be undertaken across the BESS and high voltage transformer sites during the operational stage.

5.3.2. Pest and Disease Control

All plant material shall be inspected for the presence of any pests or disease occurring and appropriate action shall be taken to remedy the disease and eradicate pests.

All materials used in connection with these works shall be of an approved type and be applied and used in accordance with the conditions for the use of herbicides which will be outlined in the specification documents at construction stage.

5.3.3. Public Rights of Way

The PRoW extending through the Site (public footpath P4/5/1) will be partly diverted although retained to allow unhindered navigation and passage through the Site on a slightly different alignment. Vegetation will be checked periodically and pruned where necessary to maintain an obstruction free route. Stiles and gates will be repaired (or

replaced) and checked to ensure they are safe and operationally effective. Repairs or replacement of stiles and gates will be undertaken, if required.

5.3.4. Security Fencing

All internal and perimeter security fencing for the BESS and high voltage transformer compound will be regularly checked to ensure it is safe and fit for purpose. Repairs and replacement of security fencing will be made as soon as possible.

5.3.5. Maintenance of Tree Supports

Supporting tree stakes, ties and tree guards where used will be maintained in a good condition, replaced as necessary and removed when trees are self-supporting (normally after two years). Tree ties will be adjusted for tightness as necessary to avoid strangulation of the tree trunks.

5.3.6. Control of Litter, Vandalism and Fly-tipping

Grounds maintenance will be delivered throughout the operational lifespan of the Proposed Development. The Site will be kept clean and free of litter as part of the regular grounds or landscape maintenance. Response to acts of vandalism, graffiti or fly-tipping will be dealt swiftly and as soon as possible.

5.3.7. Avoidance of Fertiliser and Herbicides

In order to maximise the biodiversity value of the Site, and to avoid water pollution, fertiliser use will be avoided. Herbicide use will be limited and avoided within close proximity of any drainage ponds or wetlands in accordance with Environment Agency (EA) spraying licence rules and regulations. Elsewhere within the Site, spot herbicide applications will be used to control invasive weed species, and only then when this is considered absolutely necessary to prevent damage to adjacent habitats. Any herbicide application will be carried out by suitably licensed person(s) following appropriate herbicide guidance and legislation.

5.3.8. Trees and Woodland

Both existing and proposed trees and hedgerows will be managed for the benefit of biodiversity whilst maintaining the operational performance of the Proposed Development. This will include a relaxation of management to allow them to grow out and mature providing screening and biodiversity enhancements.

Periodic pruning of trees and hedgerows will be required to maintain a healthy form and vigour. Larger log cutting will be removed and stacked securely to provide deadwood habitat or hibernacula. Any tree or limb removal will however need to be preceded by an inspection to determine whether it is suitable for nesting birds or roosting bats. Should features be present, an appropriate survey effort will be carried out to determine whether these are present.

Trees will be visually inspected on an annual basis for the lifetime of the Proposed Development by a suitably qualified arborist to ensure risks to the public and / or

infrastructure are managed appropriately. Dead or dying trees will be retained where possible subject to risk assessment to provide dead wood habitat.

New tree planting will include native species such as Silver Birch (*Betula pendula)*, Sycamore (*Acer pseudoplatanus*), Rowan (*Sorbus aucuparia*), Field maple (*Acer campestre*), Hawthorn (*Crataegus monogyna) and Horse Chestnut (Aesculus hippocastanum).* Supporting tree stakes, ties and tree guards where used will be maintained in good condition, replaced as necessary and removed when trees are self-supporting (normally after two years). Tree ties will be adjusted for tightness as necessary to avoid strangulation of the stem.

5.3.9. Hedgerows

New hedgerows will be planted in accordance with the Landscape Plan produced by LDA Design (see dwg. 8919_100). These will be mixed native hedgerows comprising native tree and shrub species including, but not limited, to Hawthorn, Hazel, Blackthorn Oak, Field maple and Dog rose.

The new hedges will be planted as a double row of whips protected with tree guards. The new plantings will be maintained in the first three years to ensure establishment. Plantings will be selectively pruned in years 1 and 3 to promote growth and vigour. Any losses will be replaced and new plantings will be kept free of weeds.

Once established, they will be allowed to grow into tall, thick, mature hedgerows. Hedgerow structure will be maintained by cutting back the sides of the hedges to maintain access and encourage strong growth at the base of the hedges. This would be on a rotation of 3 to 5 years.

Management of hedges will maintain an 'A'-profile to the full width of the hedge at the base. Hedgerow works will be undertaken outside of the bird nesting season (March – August inclusive) and will be cut at the end of the winter period to ensure fruit and seeds remain in place a food source during the winter months.

5.3.10. Scrub Mosaic (and Ecotone)

Areas of native scrub mosaic and the ecotone vegetation will be planted and managed for landscape and biodiversity value. Species will include Hawthorn, Blackthorn, Dog rose, Guelder rose, Elder, Holly, Hazel, Gorse and Bramble.

Periodic pruning and selective thinning to maintain the open scrub mosaic and to reduce bramble colonisation will be undertaken outside of the bird nesting season at the end of the winter period to ensure fruit and seeds remain in place a food source during the winter months (i.e. in early February).

The areas of proposed scrub mosaic would be managed to comprise approximately 30% native scrub coverage. The ecotone on the margins of the proposed native woodland would be manged to comprise approximately 60% native scrub coverage.

5.3.11. Neutral and Wildflower Grassland

The creation of the neutral and wildflower grassland will need to be ploughed and re-seeded with an appropriate seed mix including grasses, and a range of wildflower species,

such as greater knapweed, red clover, yarrow, yellow rattle, devil's-bit scabious, hemp agrimony and meadowsweet. Once established, the neutral and wildflower grassland will be cut bi-annually on rotation, in late summer (August) after setting of seed. All arisings will be collected and used to create habitat piles in the fields margins or adjacent to the scrub mosaic.

5.3.12. Pond Creation with Marginal Planting

The ponds will be managed for the biodiversity enhancements whilst maintaining water storage capacity and flow levels. Pond marginal planting will be seeded and plug planted. The ponds once established will benefit from limited thinning of vegetation to decrease overshading. This will improve the quality of the aquatic habitat in places while retaining much of the dense scrubby vegetation potentially used by aquatic species and birds. Invasive wetland species such as Bulrush (*Typha latifola*) will be monitored and periodically removed, if necessary.

6.0 Implementation, Roles, Responsibilities and Monitoring

6.1. Implementation

Planting should be undertaken in accordance with the Landscape Plan for the BESS and high voltage transformer compound produced by LDA Design (see dwg. 8919_100).

6.2. Roles and Responsibilities

This LEMP incorporates objectives and prescriptions for the approach to be adopted in the maintenance and management of the BESS and high voltage transformer compound.

The aim is to promote a sensitive management approach, which protects and improves the landscape and visual amenity values, enhances biodiversity and is compatible with the functionality of the development.

The management and maintenance of the Proposed Development will be undertaken by a private landscape management company appointed by REWE 7 Ltd.

The successful contractor will be required to manage and maintain the landscapes of the development within the BESS and high voltage substation compounds in accordance with this LEMP.

REWE 7 Ltd shall satisfy themselves that the appointed contractor is fit and capable of undertaking the management tasks as detailed within this LEMP.

Details of the appointed contractor will be provided to VoGC. Contact details of the appointed contractor will also be made available to local residents and provided at suitable locations within the Site.

6.3. Monitoring

The LEMP is a dynamic document that should be reviewed regularly and developed or amended as circumstances change. Monitoring of the LEMP will be undertaken every 5 years by a suitably qualified ecologist and landscape architect and a written report produced. The monitoring will be carried out at an appropriate time of year to determine whether the target conditions set out in the LEMP are being met.

Where the delivery of the LEMP is not being met for whatever reason(s) appropriate action will be identified and taken to rectify failings. This may entail making changes to specification of planting species if these are failing to establish successfully. Equally, where successes are identified, these should be promoted further and lessons learned from both success and failure fed into the next iteration of the LEMP.

7.0 References

- Castle Road BESS Design (Windel dwg. WIN-BES-08-DR-03-03-01)
- Proposed Levels Plan (Campbell Reith dwg. 14171-CRH-XX-DR-C-5000-P3)
- Landscape Plan (LDA Design dwg. 8919_100)
- Landscape and Visual Impact Assessment (LVIA) by LDA Design (Feb 2025)
- Ecological Impact Assessment (EcIA) by BSG Ecology (Feb 2025)
- Arboricultural Report and Survey BS5837:2012 by Sylva Consultancy (Feb 2025)

8.0 Figures

Figure 1: Landscape Plan by LDA Design (see dwg. 8919_100)

9.0 Appendices

Appendix 1: Management Programme Schedule

Appendix 1: Management Programme Schedule

Management Prescription	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5 - 35	Every 5 years	Every 10 years
Enabling / Pre-Commencement								
Trees / Vegetation								
Pruning of vegetation for construction in accordance with Arboricultural Method Statement (AMS)	✓							
Erection of tree protection fencing in accordance with Tree Protection Plan (TPP)	✓							
Operational Maintenance								
Trees								
Annual visual inspection of trees to ensure duty of care to users of PRoW and operational performance of the BESS.		✓	✓	✓	✓	✓		
Pruning if required to be undertaken in later winter (February), inspections to monitor health of trees and to remove dead, dying or diseased wood where necessary in accordance with BS3998:2010. Safe stacking of logs in small piles *in situ.*		✓	✓	✓	✓	✓		

Management Prescription	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5 - 35	Every 5 years	Every 10 years
Existing Hedgerows								
Relaxation of management to allow hedgerows to mature and grow out. Pruning if required to maintain operational performance undertaken in later winter (February) in accordance with BS3998:2010, inspections to monitor health of trees and to remove dead, dying or diseased wood where necessary. Chippings to be removed.	✓	✓	✓	✓	✓	✓		
Boundary Hedgerow Enhancements								
Planting of new native species as indicated in Figure 1 to gap up and strengthen existing hedgerows.	✓							
Neutral and Wildflower Grassland								
Cutting of grassland areas, harrowing and spread of wildflower seed mix in autumn as per landscape plans.		✓						
One late summer cut (August) to *c.* 50mm high to allow seeds to set. Removal of arisings and creation of habitat piles near boundary hedgerows, woodland and scrub mosaic.			✓	✓	✓	✓		
Scrub Mosaic (and Ecotone)								

Management Prescription	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5 - 35	Every 5 years	Every 10 years
Annual inspection and pruning as required to maintain operational performance. Pruning if required to be undertaken in late winter (February) in accordance with BS3998:2010 to allow fruit and seed to remain in place over winter.		✓	✓	✓	✓	✓		
Areas of proposed scrub mosaic would be managed to comprise approximately 30% native scrub coverage. The ecotone on the margins of the proposed native woodland would be manged to comprise approximately 60% native scrub coverage.								
Native Woodland								
Annual inspection and pruning as required to maintain operational performance. Pruning of overhanging branches within woodland, if required, to be undertaken in late winter (February) in accordance with BS3998:2010 to allow fruit and seed to remain in place over winter. Cut wood to be stacked in piles where possible.		✓	✓	✓	✓	✓		
Wetland or Pond								
Annual inspection to remove any bull rushes or other invasive species.		✓	✓	✓	✓	✓		

Management Prescription	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5 - 35	Every 5 years	Every 10 years
Review of LEMP and amendment of management regime if required.							✓	