SWANSEA BESS

LANDSCAPE & VISUAL APPRAISAL

TGP Landscape Architects Ltd
Suite 4.01, 4th Floor
100 West Regent Street
Glasgow
G2 2QD

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1 Introduction

TGP Landscape Architects Ltd, a Landscape Institute-registered Practice, have been commissioned by DWD Ltd (the Agent) on behalf of Statkraft (the Client) to prepare the Landscape and Visual Appraisal (LVA) to identifying the predicted landscape and visual effects of the proposed Swansea Battery Energy Storage System (BESS) with associated infrastructure (the 'Proposed Development') on 6.4ha of land (the 'Site') located adjacent to the currently under-construction Swansea Greener Grid Park, Swansea. This is located approximately 120m east of the existing Swansea North 400kV Substation and Compressor Station.

The LVA is augmented by the following figures within **Appendix C**.

- Figure 1 – Zone of Theoretical Visibility;
- Figure 2 – Zone of Theoretical Visibility with Screening;
- Figure 3 – National Landscape Character Areas (NLCAs);
- Figure 4 – Landscape Designations, Ancient Woodland and Recreational Routes;
- Figure 5 – Residential Receptors;
- Figure 6 – ZTV with Screening and Viewpoints;
- Figure 7 – Cumulative Development;
- Drawing 2242/L01 – Landscape Mitigation Masterplan
- Swansea 100MW BESS Aerial Graphics (CGI)

1.1 Scope of the LVA

The LVA seeks to identify the potential landscape and visual effects that would occur as a result of the Proposed Development and is organised in the following sections:

- Guidance and Methodology – outlines the general methodology, with reference to established guidance (full version in **Appendix A**);
- Planning Policy Context;
- Baseline Description – including the fabric, character and quality of the local landscape. This includes the special characteristics of landscape planning designations, and a description of the main visual receptors within the Study Area;
- Proposed Development and Mitigation – describes the aspects of the Proposed Development which have the potential to result in landscape or visual effects, and the measures incorporated into the project design to mitigate these potential effects;
- ZTV Analysis – analysis of the geographic extents of visibility and the potential magnitude of change within the Study Area;
- Construction Stage Effects – assesses the effects of the Proposed Development during the temporary construction stage;
- Landscape Effects – assesses the effects of the Proposed Development on the landscape fabric, landscape character and quality of the landscape designations within the Study Area;
- Visual Effects – assesses the effects arising from the Proposed Development on the visual amenity of the receptors within the Study Area;

- Cumulative Effects – considers the combined effects of the Proposed Development in combination with other notable elements of infrastructure; and
- Conclusions – a summary of the LVA results.

1.2 Study Area

A 3km radius Study Area from the Proposed Development has been adopted for the assessment of landscape and visual effects. This has been informed by analysis of Zone of Theoretical Visibility (ZTV) maps and an early appraisal of potential effects for a Proposed Development of this scale. Any notable landscape or visual effects would be confined within this geographical area.

2 Guidance and Methodology

2.1 Guidance

The methodology presented here is based on the following best practice guidance:

- *Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3);* Prepared by the Institute of Environmental Management and Appraisal and the Landscape Institute, 2013;
- *Landscape Character Assessment: Guidance for England and Scotland;* Prepared on behalf of the Countryside Agency and NatureScot, Land Use Consultants, 2002;
- *Landscape Sensitivity Assessment Guidance;* NatureScot, 2022; and
- *Visual Representation of Development Proposals; Landscape Institute Technical Guidance Note 06/2019* (2019).

In addition, reference has been made to other published guidance and the LVA has drawn on the following relevant baseline information:

- Swansea Local Development Plan (LDP) 2010-2025. (Adopted 2019);
- LANDMAP;
- Ordnance Survey Land ranger (1:50 000) and Explorer (1:25 000) maps;
- Field surveys; and
- Aerial photography.

2.2 Methodology

The LVA aims to identify and evaluate the potential landscape and visual effects arising from the Proposed Development. Wherever possible, identified effects are quantified, albeit the nature of landscape and visual appraisal requires interpretation by professional judgement. In order to provide a level of consistency to the appraisal, the prediction of magnitude and appraisal of the residual landscape and visual effects have been based on pre-defined criteria.

GLVIA3 states in paragraph 2.23 that, “Professional judgement is a very important part of the LVIA.” and “In all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others.” (Paragraph 2.24).

Landscape and Visual Appraisals are distinct, though linked procedures. The appraisal of the landscape recognises the potential changes in the physical components of the landscape and associated changes in its character and how it is experienced, which may in turn affect the perceived value ascribed to the landscape.

Visual effects relate to changes in the composition of existing views as a result of changes to the landscape, to people's responses to the changes and to the overall effects with respect to visual amenity.

Level of Effect

The level of any identified landscape or visual effect is assessed in terms of being Major, Moderate, Minor or Negligible. Intermediate correlations are also possible and depend upon professional judgement, e.g. Major/Moderate. These categories are based on the juxtaposition of landscape or visual sensitivity with the predicted magnitude of change, as set out in Table 1.

Table 1: Landscape & Visual Effects Matrix

Receptor Sensitivity	Magnitude of Change				
		Substantial	Moderate	Slight	Negligible
	High	Major	Major/Moderate	Moderate	Minor
	Medium	Major/Moderate	Moderate	Moderate/Minor	Minor/Negligible
	Low	Moderate	Moderate/Minor	Minor	Negligible

This juxtaposition is not used as a prescriptive tool, rather it allows for the exercise of professional judgement. Thus, in some instances a particular parameter may be considered as having a determining effect on the analysis. Where the landscape or visual effect has been classified as Major or Major/Moderate this is considered to be notable. Where Moderate effects are predicted, professional judgement is applied to ensure that the potential for notable effects arising has been thoroughly considered. The complete appraisal methodology is set out in **Appendix A**.

2.4 Landscape Masterplan

The LVA is supported by a Landscape Masterplan (TGP drg. No. 2242/L01). This takes into account site-specific opportunities and constraints, and sets out the proposed planting and other measures that will assist in reducing potential effects. The enhancement measures embedded with the Proposed Development seek to integrate with existing landscape character, and the landscape proposals consented for the adjacent Swansea Greener Grid Park (GGP) which is currently under construction to the north of the Site. The consented landscape approach at Swansea GGP incorporates blocks of native woodland planting and species-rich meadow.

The embedded planting proposals for the Proposed Development incorporate appropriate hedge bank and hedge planting to the south of the existing overhead power lines, alongside woodland block

planting (smaller-scale trees in line with National Grid guidance). This would result in combined benefits in terms of screening the Proposed Development and the consented Swansea GGP. The Landscape Masterplan takes a holistic approach, and incorporates biodiversity and arboricultural enhancement and SuDS.

3 Assumptions

The following assumptions have been made in respect to the LVA:

- The Site – refers to the land located within the red line boundary (as shown in Figures 1-6).
- The Proposed Development – comprises Battery Containers, Inverters, Control Containers, Auxiliary Transformer, Generator, Welfare and Office (with max height of 3.75m), Operations Room (max height 5.5m), ancillary infrastructure including cable route, access tracks, perimeter fence (3.4m height), associated landscape works and SuDS.
- All distances listed within this LVA are measured to the nearest building / element of infrastructure.
- For the purposes of the LVA, the Proposed Development is regarded as being 'permanent'. The construction stage would be temporary, approximately 12-18 months in duration.
- The landscape masterplan forms an integral component of the Proposed Development.
- Viewpoint locations included in the assessment are from publicly accessible locations.
- Visual effects are assessed on the basis of good visibility. Visual effects can be expected to vary e.g. poor visibility at times of low cloud, rainfall and dusk. At these times a reduction in visual clarity, colour and contrast would be experienced. Reduced visibility would limit the extent of view, particularly from mid to long distance views. Consequently, the assessment of effects is based on the worst-case scenario, where the Proposed Development would be most visible.

4 Consultation

A formal pre-application request was submitted to Cyngor Abertawe/Swansea Council on 17th January 2025, with request for Screening submitted 24th January.

The following viewpoint locations listed in **Table 2**, alongside the rationale for their selection, were determined from desk-based analysis and field study. As per GLVIA3 guidance, these have been chosen based upon receptor type; the ZTV overlay; location in relation to Proposed Development (distance/elevation/orientation); and public accessibility. A further request for advice and comment on the selected viewpoints was issued to Swansea Council Planning on 6th February 2025.

Figure 6 illustrates the viewpoint locations.

Table 2: Viewpoint Locations

Viewpoint	Rationale
1. View northeast from public right-of-way (footpath) MW67	Close-proximity view from publicly accessible land.

Viewpoint	Rationale
2. View north from public right-of-way LF117 (approximately 170m west of Maes-eglwys)	Recreational route and representative of residential properties in close proximity south of the Proposed Development.
3. View southeast from public right-of-way (footpath) MW64B	Recreational route, slightly elevated above the Proposed Development. Also indicative of potential residential receptors adjacent to this location.
4. View northwest from Pant-Lasau (Rhyd-y-pandy Road)	Indicative of properties with potential visibility from fringe of conurbation.
5. View southwest from summit/trig point of Mynydd Gelliwastad hill	Representative of longer-distance, elevated views within a designated landscape.

5 Planning Policy Context

The following section identifies the planning policy and other planning guidance material specifically relevant to the LVA. This includes consideration of the following:

- Planning Policy Wales (PPW), Edition 12 (February 2024);
- Future Wales – the National Plan 2040 (February 2021); and
- Swansea Local Development Plan (LDP) 2010-2025. (Adopted 2019).

5.1 Planning Policy Wales

Planning Policy Wales sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters.

PPW and the National Development Framework (published as Future Wales – the National Plan 2040) set out how the planning system at a national, regional and local level can assist in delivering the requirements of sustainable development through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).

5.2 Future Wales – the National Plan 2040

Future Wales, as the national development framework, is the highest tier of development plan in place to ensure the planning system at all levels is consistent with, and supports the delivery of, Welsh Government strategic aims and policies.

5.3 Swansea Local Development Plan 2010 – 2025

The 2019 adopted LDP forms the statutory development plan for the Council. Together with the National Plan, it is used as the primary material consideration to inform decisions on planning applications and development proposals. Those policies relevant to the Proposed Development are:

- Policy CV 2: Development in The Countryside;
- Policy ER 2: Strategic Green Infrastructure Network;
- Policy ER 5: Landscape Protection;
- Policy ER 11: Trees, Hedgerows and Development; and
- Policy EU 1: Renewable and Low Carbon Energy Proposals.

6 Baseline Description

6.1 Landscape Character

The Site comprises livestock-grazed managed grassland located within the transitional zone between the National Landscape Character Areas (NLCA)[1] of Swansea Bay (NLCA38) and South Wales Valleys (NLOA37) to the north. The Site location in relation to these NLCAs is shown in **Figure 3**.

This landscape is predominantly influenced by the valley NLCA, characterised by gentle to rapid changes in topography resulting in a medium sense of scale, at times enclosed and intimate through land-cover of woodland and mature field boundaries, while often allowing wider views across rolling countryside to a backdrop of more dramatic hills. Key characteristics relevant to study area and the Site are:

Swansea Bay NLCA

- Setting of steeply rising hills – in the central section around Port Talbot, and belonging to South Wales Valleys to the north.
- Agriculture – in areas away from dunes and lagoons that have not been built on. Predominantly pasture for dairy, sheep or horse paddocks in regular, hedged fields.

South Wales Valleys NLCA

- Numerous steep-sided valleys – typically aligned in parallel, flowing in southerly directions.
- Contrast of urban valley activity next to quiet uplands.
- Large blocks of coniferous plantation and deciduous woodland fringes – covering many steep hillsides and hill tops.
- Improved pastures on some lower valley sides – grazed by sheep and some dairy cattle.
- Field boundaries – fields on lower slopes are bounded by dense hawthorn hedges, interspersed with swathes of broadleaved woodland.

6.2 Landscape Designations

Landscape designations are considered in the determination of the sensitivity of landscape and visual receptors as they provide an indication of value ascribed to the landscape or visual resource.

With reference to **Figure 4**, the Site is not located within a designated landscape, although the Mawr Uplands Special Landscape Area (SLA) is located approximately 1.6km east of the Site. An area of Ancient Woodland (AW) lies to the west around the Swansea North Substation and compressor station. There are no other landscape designations, or Gardens and Designed Landscapes within the

[1] National Resources Wales, NLCA, https://naturalresources.wales/evidence-and-data/maps/nlca/?lang=en

proposed 3km study area.

6.3 Landscape Context

The wider landscape is predominantly rural countryside with some man-made visual elements and is well wooded. Large-scale pylon infrastructure passes through the Site, with further electrical infrastructure in the form of wooden electricity poles and overhead cables, the substation to the west and solar farms to the southwest, east, and north.

Tree and woodland cover within the local landscape blends and screens much of this infrastructure, creating physical and visual barriers between developments. Field boundaries within the area comprise post and wire fencing, ditch, stone bank, and hedge. These boundaries are in varying condition.

6.4 Landscape Sensitivity

Landscape sensitivity has been determined by consideration of the LANDMAP Aspect Areas. The analysis is described within **Appendix B**.

Through this analysis of character and designation, it is determined that the receiving landscape has a **Medium** sensitivity to the nature and scale of development based upon the existing baseline of scale/topography; land use; land cover; complexity; and perception.

Hedge and hedgerow bank loss, along with the existing substation and overhead cable infrastructure tends to reduce the value of the landscape within the local area in combination with M4 noise experienced from the south. While adverse, this landscape degradation presents opportunities to further improve the landscape character baseline through appropriate enhancement in the form of hedgerow and woodland planting through the development proposals.

6.5 Visual Baseline and Receptors

Landscape Designations and key recreational routes (public rights-of-way) within the Study Area are shown in **Figure 4**, overlaid with ZTV mapping. Initial analysis shows that the spread of visibility and potential effects on views from these areas and routes is very limited.

Local Residents

Individual and main groups of residences are shown in **Figure 5**, overlaid with ZTV mapping. These comprise a scattered spread of farm and individual dwellings within the NLCA, and concentrated areas of property along roads within the valleys. In combination with the limited ZTV footprint, there would be low numbers of potential visibility-impacted residential receptors in the local and wider landscape. Based on the initial analysis, the main receptors that may experience views of the Proposed Development include:

- Abergelli Farm and 2no. detached houses to the southwest of Abergelli Farm, located approximately 650m northwest of the Proposed Development;

- Properties at Maes-eglwys, located approximately 300m south of the proposed BESS infrastructure; and
- Properties on the eastern side of the Rhyd-y-pandy Road, northwest of Pant-Lasau, and located approximately 840m southeast of the proposed BESS.

Recreational Receptors

Figure 4 shows recreational routes within the Study Area. Those illustrated as falling under the footprint of ZTV mapping are listed below in order of increasing distance from the Proposed Development:

- Public Right-of-Way LF117, approximately 50m to the west (at closest point),
- Public Right-of-Way MW64B, approximately 410m to the northwest (at closest point), and
- Public Right-of-Way MW66, approximately 1.25km to the east.

7 Proposed Development and Mitigation

This section describes those elements of the Proposed Development with the potential to cause landscape and visual effects within the Study Area.

7.1 Proposed Development Description

The location of the Site is illustrated in **Figure 1**. The Proposed Development would involve localised areas of ground clearance to facilitate construction and the introduction of the following key elements:

- Proposed BESS Compound with Battery Containers (2.6m height), Inverters (3.75m height), Control Containers (2.6m height), Store (2.6m height), Auxiliary Transformer (2.5m height), Generator (3.5m height), Air Core Reactors (1.6m height), Water Tank (3m height), Welfare and Office (2.75m height), and Operations Room (5.5m height),
- ancillary infrastructure including cable route linking to the consented Swansea GGP to the north of the BESS compound, and security lighting columns (6m height),
- Perimeter fence (3.4m height),
- 6m wide access tracks, hard standing and turning area, and
- Landscape planting, SUDS, and biodiversity enhancement measures.

The LVA takes account of each of these elements and makes reference to them within the appraisal where relevant.

7.2 Landscape Design and Mitigation

Site Location

The initial Site selection provides a location adjacent to existing electrical infrastructure allowing for connectivity to grid without excessive disruption through additional overhead or lengthy underground cabling.

The Site benefits from established woodland screening to the west, with pockets of woodland found around the North Swansea substation and compressor station. Further woodland and field boundary

trees within the locale and NLCA allow for screening or filtering of direct views of the Proposed Development from many other areas.

The consented GGP development immediately to the north of the Site incorporates extensive screen/buffer woodland around its perimeter. The presence of this built form along with the natural screening element will provide further residual (long-term) visual screening to the Site from receptors to the north.

The close geographic relationship with the existing substation and GGP minimises the length of the required grid connection cable (underground) and avoids the spread of infrastructure across wider parts of the surrounding landscape. Whilst the proposed cable connection would require a slight reduction in the area of woodland planting at the consented GGP site, this would be more than compensated for by new areas of woodland planting embedded within the landscape masterplan for the Proposed Development. The proposed landscape design approach is described further below.

Site Design

In terms of landscape design, the proposals incorporate a comprehensive mitigation and enhancement strategy that seeks to integrate the Proposed Development into the surrounding landscape through appropriate woodland planting. Such planting, along with suitable bio-diverse groundcover, further draws from recommendations within the Biodiversity Enhancement Plan. To this end, the Proposed Development has been designed to achieve the following landscape objectives:

- Perimeter fencing would be finished in a recessive colour (RAL 6003 Olive Green, or similar approved) to blend into natural/landscape screening.
- Proposed landscaping would incorporate areas of native woodland, planted on the southern part of the Site. The planting approach would be based on mixed native species to provide visual containment and screening of the Proposed Development, whilst also reflecting and enhancing local landscape character, and contributing towards wildlife habitat and biodiversity targets. All trees would be of local provenance, with an emphasis on native broad-leaved species. The proposed woodland would be planted at the first available opportunity in accordance with seasonal restrictions (Oct - March for bare root plants).
- A new strip of hedgerow along the southern Site boundary (using native species) would provide further ecological enhancement, forming a continuous link between existing hedgerows that demarcate the field boundaries to the south of the Site. As above, this would be planted at the first available opportunity (Oct - March for bare root plants).
- Species-rich wildflower meadow is proposed along the National Grid pylon wayleave (where there are restrictions on planting of taller vegetation) and in other areas of the Site, including the verges along the access and all open space. This would boost species diversity within the immediate and local areas of the Site, and be of benefit to the wider area, providing cover and food source. Ground/soil preparation and over-seeding would be at the first available season with establishment thereafter through appropriate maintenance similar to hay meadow.

The assessment of potential impacts presented in the appraisal takes account of the proposed new areas of planting within the determination of levels of effect, on the basis that they form an integral part of the Proposed Development. Such impacts and resultant effects of this natural element of the design are likely to be viewed as beneficial.

However, taking a 'worst case scenario', the assessment is based on the initial appearance of the Site immediately after completion of construction (prior to full establishment of the proposed planting). This is followed by an assessment of residual effects (at 'Year 15') when the proposed planting would be established.

8 ZTV and Graphics Analysis

The potential landscape and visual effects arising from the Proposed Development have been analysed in two ways:

- Zone of Theoretical Visibility (ZTV) map analysis, to provide a general overview of the geographical extent of visibility of the Proposed Development within the Study Area; and
- Analysis of the potential effects of development from initial 3D massing visualisations (see **Appendix C**). Selected photomontage visualisations will be completed and submitted additionally in accordance with the Viewpoints described in Table 2.

8.1 Zone of Theoretical Visibility Analysis

The screened ZTV in **Figure 2** clearly illustrates the landcover of the NLCAs within the Study Area, highlighting the screening influence of both small and substantive pockets of woodland, along with built form. These elements would notably restrict potential views of the Proposed Development.

As shown, the main footprint of potential visibility falls within the locality of the Site: to the north, west of Abergelli Farm; pockets extending east (2km) through southeast (1km); and to the south of the M4 corridor (sporadic to 3km). The eastern extents of the ZTV fall on the western face of Mynydd Gelliwastad hill, which rises to 213m AOD at its summit, and which is within the Mawr Uplands SLA.

8.2 Graphics Analysis

Analysis has been carried out on initial computer-generated aerial visuals of Proposed Development in context with screen structure planting. These CGI visuals are included within Appendix C. Allowing for formal pre-application response from Cyngor Abertawe/Swansea Council on selected viewpoints, additional targeted photomontage visualisations will be prepared, analysed, and submitted for the final planning application.

<u>Graphic: View towards the northeast</u>

Generated to show the massing of structures within the BESS development along with proposed structure planting from an overhead position to the southwest of the Site, the initial graphic shows the linear form of the BESS site, which is constrained by the existing pylon infrastructure to the south.

By Year 15, the establishment of the woodland planted around the GGP to the north, along with mitigation/enhancement planting to the south of the pylon wayleave would further contain the Proposed Development and present an additional beneficial landscape element, merging and connecting with the existing woodland in the immediate area and complementing the pattern of stances of trees.

Graphic: View towards the southeast

Generated to show the massing of structures within the BESS development and planting from an overhead position to the northwest of the Site, the initial graphic shows the linear form of the BESS site, which is constrained by the existing pylon infrastructure.

Again, by Year 15, the establishment of the woodland planted around the GGP to the north would provide substantial screening, while hedge planting to the east provides a linear corridor connecting to tree planting in the south which further contains the Proposed Development and screens views from the south.

9 Construction Stage Effects

Whilst it is the operational stage of the Proposed Development that would give rise to residual (long-term) landscape and visual effects, temporary effects at the construction stage would also occur based on the following operations:

- Erection of temporary perimeter fencing;
- Removal of 4no Oak trees and 1no Birch tree within the Site (refer to independent Arboricultural Impact Assessment (AIA) undertaken by Keen Consultants, February 2025);
- Installation of temporary construction compound, including office and welfare facilities (located within the footprint of the permanent compound);
- Creation of temporary laydown areas;
- Further site clearance and earthworks, including creation of platforms for BESS structures;
- Excavation works for foundations and cable route connection to GGP;
- Increased vehicular movement to, from, and within the Site;
- Gradual introduction of proposed buildings / infrastructure; and
- Reinstatement works, including the removal of the temporary accommodation.

The works detailed above would give rise to some landscape and visual effects. This is due to the contrast of these elements / activities with the more rural characteristics of the local landscape, although would be tempered by the presence of existing built form and human activity in the nearby area (including consented GGP and existing Swansea North 400kV Substation and Compressor Station).

9.1 Construction Stage Landscape Effects

At a local level within the Site, the clearance activities (including loss of 4 trees) and change of use from agriculture to electrical/BESS infrastructure presents a notable change, based on a Substantial magnitude of change resulting in a Major/Moderate (adverse) effect. While many of the elements of construction are temporary, the result of these effects will be long-term.

Site levelling works and the gradual introduction/movement of materials in order to create platforms and foundations would coincide with a short term, temporary increase in vehicle movements/human activity to, from, and within the Site, alongside temporary elements such as laydown areas, construction compound, site office, and welfare facilities.

The retention of other existing boundary trees and hedgerows within the Site and adjoining area would be ensured in accordance with protection measures as outlined by *BS5837 (2012): Trees in Relation to Design, Demolition and Construction*.

The access to the proposed BESS site is shared with the consented GGP development immediately to the north. Formation of the access will intersect the public right-of-way (footpath) LF117 which has been assessed within the GGP application. While this access/footpath intersection will exist at time of BESS construction activities its impact in terms of vehicular movement are noted.

In terms of landscape fabric, the Site is considered to be of Medium sensitivity to the Proposed Development. This is due to the presence of large-scale electrical infrastructure (pylons and substation/compressor station) within the local countryside. On balance, the magnitude of change associated with the construction operations would be Moderate to Substantial, and the resultant level of effect on landscape fabric being Major/Moderate (adverse). This is assessed as being notable and temporary.

9.2 Construction Phase Effects on Visual Amenity

The visual effects of the activities during the construction phase would be temporary and predominantly limited to the local area. This is based on the containing effect of surrounding woodland and hedgerows, in combination with the baseline of existing substation/compressor station, and future baseline incorporating the Swansea GGP (currently under construction).

Within this localised area potentially impacted residential properties (of High sensitivity) are identified below. Given their proximity to development, the following impacts of construction can be expected:

- Abergelli Farm and 2no. detached houses to the southwest of Abergelli Farm (650m northwest of the Proposed Development)

  Construction activities would be predominantly screened by intervening woodland and field boundary trees. Direct views will also be buffered/screened by the mitigation/enhancement planting associated with the GGP complex. The magnitude of change would be Slight, with a Moderate (adverse) and not notable level of effect.

- Properties at Maes-eglwys (300m south of the proposed BESS infrastructure)

  Views towards the Site from houses in this complex tend to be secondary in nature, with main views orientated south (away from the Site). Some garden views, filtered through existing buildings, would be towards development. Construction operations would be evident in these views with magnitude of change assessed as Slight to Moderate, and level of effect deemed Moderate to Major/Moderate (adverse) and notable.

- Properties on the eastern side of the Rhyd-y-pandy Road (northwest of Pant-Lasau, 840m southeast of the proposed BESS)

  Views towards the Site are substantively screened by intervening roadside and field boundary hedgerows and trees. Given distance, orientation, and intervening vegetation, magnitude of change during the construction stage would be Slight, with a Moderate (adverse) and not

notable level of effect.

On balance, the visual magnitude of change experienced by local residents during the construction phase would be Moderate. The resultant effect would be Moderate at worst, and notable at a local (<1km) level.

Those High sensitivity recreational routes (public rights-of-way) which have been identified through site plan and ZTV mapping overlay as having potential visibility of development (or direct impacts) experience a varied range of character as they traverse the complex NLCAs which offer up open aspects, filtered views, and intimate/enclosed settings. Given their proximity to the Site, elevation, orientation, and vegetation cover, the following impacts of construction can be expected:

- Public Right-of-Way LF117 (50m to the west)

  This public footpath link from Rhyd-y-pandy Road at Pant-Lasau to the Aber-gelli-fach Plantation at the north of the existing substation is intersected by the proposed new shared access road which is being constructed as part of the consented GGP site. As such, the physical impact to this section of path as outlined in Section 9.1 will have occurred with primary development of the GGP. For pedestrian safety, options for managing safe crossing, or closing of this path for the duration of construction operations will vary the visual effect of users. If remaining open, the presence of construction traffic and construction activities will be apparent from sections of this path close to the Site. The magnitude of change would be Slight to Moderate, with resultant effect assessed as Moderate to Major/Moderate and notable.

- Public Right-of-Way MW64B (410m to the northwest)

  Users of this public footpath link to the north of Abergelli Farm would potentially experience glimpsed views of construction works when in the vicinity of Abergelli Farm and orientated south to southeast. Given the extent of intervening woodland/field boundary trees, such views would be heavily filtered or screened. The presence of the GGP site and associated landscape (once installed) will also be a mitigating factor within such views. Magnitude of change is assessed as Negligible to Slight, with resultant effect Minor to Moderate, and not notable.

- Public Right-of-Way MW66 (1.25km to the east)

  The main views from this public bridleway in close proximity to Gelliwastad Farm are orientated away from development. Substantial filtering and screening of direct views occur due to intervening hedgerow and field boundary trees, along with stances of mature trees. Any glimpsed views of construction activity at the range of approximately 1.2km would present a magnitude of change deemed Negligible to Slight, with resultant effect Minor to Moderate, and not notable.

On balance, the visual magnitude of change experienced by recreational path users during the construction phase would be Moderate. The resultant effect on visual amenity would be Moderate at worst in context of the wider path/bridleway network (not notable), and Major/Moderate (notable)

in the closest proximity to Site.

In more open and expansive views from eastern upland landscapes, the construction activities would be experienced at distance, within a local context which currently comprises large-scale infrastructure at the substation, and the associated pylons & overhead lines. Any views of construction activities would be absorbed by the landform, tree cover, and existing infrastructure.

Along with the site clearance, earthwork activities, excavation activities, material storage and an increase in traffic movement at the Site, the visual effects would occur primarily from the gradual appearance of the associated BESS infrastructure (which are considered below under 'Operational Effects'). Adverse effects would be reduced through good site management and the temporary nature of the construction activities.

10 Operational Landscape Effects

This section examines the effects arising as a result of the Proposed Development with reference to landscape fabric within the Site, landscape character and landscape designations.

10.1 Effects on Landscape Fabric

As described above, the local landscape of the Site comprises agricultural (grazing) land, containing pockets of woodland/tree cover and field boundaries of varying natural quality. The wider landscape is predominantly managed agricultural land (grazing), though this is heavily influenced by energy infrastructure (both old – existing substation/compressor station and pylons/transmission lines, and new – ground-mounted solar power generation and the emerging GGP). As such, the landscape fabric within the Site is assessed as being of Medium sensitivity to the Proposed Development.

The Proposed Development would result in the permanent introduction of new electrical storage infrastructure into an area that is clearly influenced by existing energy elements.

On balance, the magnitude of change upon the fabric within the Site would be Substantial, giving rise to a Major/Moderate level of effect (notable).

10.2 Effects on Landscape Character

The effect of the Proposed Development on landscape character largely depends on the key characteristics of the receiving environment; the degree to which the development may be considered to be consistent with or at odds with it; and how the proposal would be perceived within its setting.

<u>Effects on the Fringe Landscape of Swansea Bay and South Wales Valleys NLCAs</u>

With reference to sensitivity analysis within **Appendix B**, the local landscape character at the Site is assessed as being of Medium sensitivity to the type and scale of Proposed Development. The effects on landscape character would be direct (predominantly affecting the Site itself) and indirect (affecting the visual and perceptual characteristics of the surrounding area).

In terms of direct effects, there would be loss of agricultural grassland and five existing trees. The

proposed BESS and infrastructure would be introduced to a part of the NLCA that already accommodates extensive electricity infrastructure.

The Proposed Development would incorporate native woodland planting and wildflower meadow, providing a visual aesthetic and representing beneficial elements within the local landscape. The new woodland and hedgerow planting would blend into the adjoining areas of existing broad-leaved woodland that extend to the west and northwest of the Site.

While adverse, the loss of this small number of trees within the Site would present no major alteration to key woodland character features that define this NLCA in the local area, while the scale/type of development within the NLCA would not detract from, or generate additional adverse effects of a scale to impact on, the pattern of both NLCAs to any substantial degree.

As outlined in assessment of the ZTV mapping, the main zone of potential influence falls within the local vicinity of the Site to 1km, with further influence east to 2km. Areas to the south extending to 3km are in the busy corridor of the M4 which experiences extensive urban infrastructure.

In summary, the main effects would be focused within the Site and adjacent environs, due to the existing extensive tree cover. The influence of pre-existing larger pylon and substation infrastructure within the NLCA would remain visually dominant. The BESS site would not be incongruous, grouped by this energy complex. Across wider parts of the NLCA, the magnitude of change resulting from development would be Slight, and the resultant effect would be Moderate, and not notable. Extensive parts of both NLCAs would be unaffected.

By Year 15, the establishment of woodland planting around the Site (and neighbouring GGP) would largely contain any potential views of the Proposed Development from areas to the north and south. The magnitude of change across the NLCA as a whole would be Negligible to Slight, and the residual level of effect would remain Moderate, and not notable.

11 Operational Visual Effects

This section examines the visual effects based on changes to the existing view as experienced by people within the surrounding landscape (as described in Section 6.5). This process draws on the results of the ZTV and viewpoint analysis.

11.1 Visual effects experienced by Local Residents

The appraisal below considers the effects experienced by local residents in settlements, as well as those in isolated residential dwellings/steadings in closest proximity to the Site. In all cases, sensitivity is deemed to be High. Residential properties are shown in **Figure 5**, overlaid with ZTV mapping.

Given their proximity to the Proposed Development, the following residual impacts of Proposed Development can be expected:

- Abergelli Farm and 2no. detached houses to the southwest of Abergelli Farm

  Given the low-lying nature of the Proposed Development, it would be predominantly screened

by intervening woodland and field boundary trees. Views of the BESS site will also be screened by the mitigation/enhancement planting associated with the consented GGP, located between these receptors and the Site. The existing pylons which exert greater visual influence in views, rising above mature tree heights, would remain the most substantial man-made element within southerly views. The residual magnitude of change resulting from Proposed Development would be Slight, with a Moderate (adverse) and not notable level of effect.

- Properties at Maes-eglwys (300m south of the proposed BESS infrastructure)

  Potential views of the Proposed Development would be limited to secondary and garden views, which would be filtered through existing buildings. Initially the BESS infrastructure would be evident in these views below the existing pylons, presenting a magnitude of change expected to be Moderate to Substantial with level of effect deemed Major/Moderate to Major (adverse) and notable. The establishment of embedded mitigation planting (10 to 15yr) to the south of the pylon wayleave would screen the Proposed Development and GGP site located further north. Accordingly, the magnitude of change would reduce to Slight to Moderate. The resultant level of effect would be Major/Moderate (beneficial) and notable.

- Properties on the eastern side of the Rhyd-y-pandy Road (northwest of Pant-Lasau, 840m southeast of the proposed BESS)

  Views towards the Proposed Development are substantively screened by intervening roadside and field boundary hedgerows and trees. Given distance, orientation, and intervening vegetation, residual views of the Proposed Development would see a Slight magnitude of change, with a Moderate (adverse) level of effect, not notable. The establishment of embedded mitigation planting (10 to 15yr) to the south of the pylon wayleave would screen the Proposed Development and GGP site located further north. The magnitude of change would reduce to Slight, with resultant level of effect being Moderate (beneficial) and not notable.

The most notable level of effect would be to those properties in closest proximity to the south of the Proposed Development.

By Year 15, the establishment of tree planting to the south of the pylon wayleave would soften the appearance of the Proposed Development to the extent that it would not have notable effect on these residential receptors. The establishment of embedded planting would also assist in screening the consented GGP site to the north.

11.2 Visual effects experienced by Recreational Receptors

The appraisal of effects experienced by recreational receptors is described below, listed in order of increasing distance from the Proposed Development. Recreational receptors are considered to be of High sensitivity unless stated otherwise:

- Public Right-of-Way LF117 (50m to the west)

  Users of this public footpath link from Rhyd-y-pandy Road at Pant-Lasau to the Aber-gelli-fach

Plantation at the north of the existing substation will have to cross the shared access road for the GGP and the Proposed Development. The presence of this new element within the countryside setting, along with the visible BESS infrastructure and perimeter fencing viewed at close proximity would result in a Moderate magnitude of change, with resultant effect being Major/Moderate (adverse) and notable. The establishment of embedded woodland, though welcome in views would not substantially screen development from the west and as such the magnitude of change and resultant effect of the Proposed Development would remain the same.

- Public Right-of-Way MW64B (410m to the northwest)

  Given distance and intervening woodland/field boundary trees, any glimpsed views of the BESS site would be heavily filtered or screened. The presence of the GGP site and associated installed landscape planting is a mitigating factor within views. Accordingly, the magnitude of change is assessed as Negligible to Slight, with resultant effect being Minor to Moderate, and not notable. The establishment of embedded woodland would see magnitude of change reduced to Negligible, and the resultant effect deemed Minor and not notable.

- Public Right-of-Way MW66 (1.25km to the east)

  Substantial filtering and screening of direct views occur due to intervening hedgerow and field boundary trees, along with existing stances of mature trees. Any residual glimpsed views of Proposed Development would be very limited. As such, the magnitude of change would be Negligible to Slight, with resultant effect being Minor to Moderate, and not notable. The establishment of embedded woodland would see magnitude of change reduced to Negligible, and resultant effect deemed Minor and not notable.

12 Cumulative Appraisal

This section considers the potential cumulative effects of the Proposed Development in combination with other notable elements of electricity infrastructure within the 3km Study Area.

The Proposed Development is shown in context with the following key developments within **Figure 7, Cumulative Development**:

- Existing Swansea North Substation and Compressor Station;
- Existing pylon and overhead cable infrastructure;
- Existing ground-mounted solar array developments;
- Consented Swansea GGP (Planning Refs: 2021/0163/FUL; 2022/2988/S73; 2023/0889/FUL; 2023/2262/NMA; and 2024/0756/NMA).
- Consented Battery Energy Storage System (BESS), associated infrastructure and engineering works (Land Off Bryntywod, Llangyfelach, Swansea, SA5 7LF; Planning Ref: 2024/1634/FUL);
- EDF BESS development currently in Local Planning for Screening (Planning Ref: 2024/2380/SCR);
- Innova BESS development currently in Local Planning for Screening (Planning Ref: 2024/1530/SCR).

The cumulative effects in association with existing developments are considered certain, and with consented developments they are considered very likely. As such, the cumulative assessment that follows covers existing development and those with planning consent.

The cumulative developments for consideration above form a ribbon of development extending northeast and south from the existing Swansea North substation complex. To the south this starts at the consented BESS located adjacent to the M4 at Junction 46; with the Swansea North Substation at the B4489 (Parc Felindre roundabout) to the north beyond the railway line. Immediately to the north of this substation lies the existing Brynwhilach Solar Farm which creates a physical link to the Swansea North 400kV Substation & Compressor Station, and consented GGP. The ribbon of development continues northeast towards the operational Cef Betingau Solar farm to the west of Rhyd-y-pandy Road (northeast of the Site). These developments broadly follow, and are constrained in pattern by, the path of existing pylons which traverse the landscape as large-scale vertical elements. Further solar farms are also located approximately 1.15km north of the Site.

By being physically and visually associated with the GGP and 400kV substation/compressor sites, the Proposed Development sits well with the linear form of the pylons and pattern of existing/consented development. As a result the Proposed Development would add to the current ribbon of development rather than resulting in incongruous and adverse impactful spread within the wider surrounding countryside.

With reference to the main assessment, it is judged that due to the high level of woodland and tall hedgerows within the National Character Landscape Area the influence of the Proposed Development at a human level is substantially limited to a small geographical area as shown by screened ZTV mapping (**Figure 2**).

Through the introduction of consented mitigation/enhancement planting for the adjacent GGP, in combination with the proposed Landscape Masterplan included with the application, effective screen planting comprising a mix of woodland, hedgerow, and field boundary trees, would result in a marked reduction in potential adverse visual impacts experienced from the north. Proposed hedgerow and block woodland planting within the southern part of the Site (appropriate for National Grid overhead line guidance), would also reduce potential adverse impacts upon nearby sensitive receptors to the south of the Site. On this basis, it is considered that cumulative effects, inclusive of beneficial landscape treatments, would be extremely localised.

Through development type/scale and location, the Proposed Development would result in a combined magnitude of change deemed Slight within the baseline Study Area. This presents a Moderate incremental/cumulative effect on local landscape character and visual amenity in combination with the operational and consented developments as described above. In summary, given the scale and form of the Proposed Development, the cumulative effects would be not-notable.

13 Conclusions

The Proposed Development would be located on 6.4ha of currently managed agricultural grassland in an area of the Swansea Bay NLCA. The Site locality is influenced by existing substantive electricity/energy infrastructure.

The Site would change from agriculture land use, to accommodate the proposed BESS facility and associated infrastructure of access, hardstanding, perimeter fencing, CCTV, and SuDS, as well as landscape enhancement measures that would result in areas of grassland changed to small-scale woodland and species rich meadow. Along with the removal of agricultural grassland, 4no existing Oak trees will be lost within the development footprint.

Public Right of Way LC117 is intersected by the shared GGP/BESS road. Accordingly, there would be direct impact on this path during the temporary construction stage, and future use of the Site as a BESS facility. However many of the paths within the Study Area, including sections of LC117, are degraded and impassable due to overgrowth and ground conditions. This does not detract from their significance, but is factored into considerations of general public access around the Site. The overall impact on the local and wider path network is not notable.

While elements of the Swansea Bay and adjacent South Wales Valleys NLCAs appear remote and tranquil, there are considerable detractors in the form of urban fringe, motorway, and large-scale power infrastructure which erodes some of these qualities within the local landscape around the Site. From analysis it is deemed that the Proposed Development would form a suitably-scaled linear extension of the existing, recently installed, and consented power infrastructure in the local and wider area.

The most notable consistent impact on views is the presence of pylons and overhead lines which due to their vertical scale can be seen in many views throughout the NLCA. Given the nature of hedgerows, field boundary trees, and woodland throughout the Study Area and wider NLCA, there is visual separation between lower-lying developments such as ground-mounted solar which is often fully screened at eye level from sensitive receptors.

Based on the addition of the Proposed Development, there would be no notable change to the existing landscape pattern or how it is perceived in relation to the existing baseline, or cumulatively with other consented development. The landscape planting proposals embedded within the Proposed Development would provide mitigation and enhancement that would not only provide screening to the BESS facility, but would also serve as a buffer to nearby cumulative sites in the area from sensitive receptors.

In conclusion, it is assessed that the Proposed Development could be accommodated at the Site with very limited and localised effects on landscape character and visual amenity.

References

Publications

Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3); Institute of Environmental Management and Appraisal and the Landscape Institute, 2013.

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Appendix A: LVA methodology

Landscape Effects

The starting point for the assessment of landscape effects was a desk-based review of published landscape assessments.

The sensitivity of the landscape to change resulting from a Proposed Development is not absolute and varies according to the existing landscape, the nature of the Proposed Development and the type of change being proposed. Good practice guidance differentiates between baseline sensitivity of the landscape and the sensitivity of a landscape to a specific development proposal. Accordingly, the concept of 'sensitivity to change' to new development, as described within the baseline published landscape character assessments, is distinct from the consideration of landscape sensitivity to the specific development proposal.

The baseline for consideration of landscape effects is the established landscape character. The landscape effects of a Proposed Development are considered against the key characteristics of the receiving landscape. The degree to which the Proposed Development may change 'the distinct and recognisable pattern that makes one landscape different from another, rather than better or worse' (Countryside Agency and NatureScot, 2002), enables a judgement to be made as to the significance of the effect in landscape character terms. This involves consideration of where the Proposed Development may give rise to a different landscape character type or sub-type.

In general terms, a distinctive landscape of acknowledged value (e.g. covered by a designation) and in good condition is likely to be more sensitive to change than a landscape in poor condition and with no designations or acknowledged value. General guidance on the evaluation of sensitivity is provided below; however, the actual sensitivity would depend on the attributes of the landscape receiving the proposals and the nature of those proposals.

In order to reach an understanding of the effects of development upon the landscape it is necessary to consider different aspects of the landscape as follows:

- Landscape Fabric / Elements: The individual features of the landscape, such as hills, valleys, woods, hedges, tree cover, vegetation, buildings and roads for example which can usually be described and quantified;
- Landscape Quality: The state of repair or condition of elements of a particular landscape, its integrity and intactness and the extent to which its distinctive character is apparent;
- Landscape Value: The importance attached to a landscape, often used as a basis for designation or recognition which expresses national or regional consensus, because of its special qualities/attributes including aesthetic or perceptual aspects such as scenic beauty, tranquillity or wildness, cultural associations or nature conservation interest; and
- Landscape Key Characteristics: The particularly notable elements or combinations of elements which makes a particular contribution to defining or describing the character of an area, which may include experiential characteristics such as wildness and tranquillity.

The sensitivity of the landscape to a particular development considers the susceptibility of the landscape and its value. The overall sensitivity is described as High, Medium or Low. This is assessed by taking into account the existing landscape quality, landscape value, and landscape capacity or susceptibility to change, which often vary depending on the type of development proposed and the particular site location, such that sensitivity needs to be considered on a case-by-case basis. This should not be confused with 'inherent sensitivity' where areas of the landscape may be referred to as inherently of 'high' or 'low sensitivity.

For example, a National Park may be described as inherently of high sensitivity on account of its designation, but it may prove to be less sensitive to particular development and/or the design of that development.

Alternatively, an undesignated landscape may be of high sensitivity to a particular development and/or the design of that development regardless of the lack of local or national designation. The main factors to consider are discussed as follows:

Landscape susceptibility according to GLVIA3 means "the ability of the landscape to accommodate the Proposed Development without undue consequences for maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies". Judgements on landscape susceptibility include references to both the physical and aesthetic characteristics and the potential scope for mitigation that would be in character with the landscape.

The judgements regarding susceptibility and value of the landscape character are identified within the sensitivity table included within **Appendix B**. These relationships can be complex and value alone does not automatically or by definition have high susceptibility to all types of change. Examples and on the evaluation of landscape sensitivity are provided below:

Table A.1: Landscape sensitivity criteria

High Sensitivity	Landscape character, characteristics and elements which would generally be of lower landscape capacity or scope for landscape change, and of notable landscape value and quality. These are landscapes that may be considered to be of particular importance to conserve and which may be particularly sensitive to change if inappropriately dealt with.
Medium Sensitivity	Landscape character, characteristics and elements where there would be a moderate landscape capacity or some scope for landscape change. Often include landscapes of moderate landscape value and quality which may be locally designated.
Low Sensitivity	Landscape Character, characteristics and elements where there would be higher landscape capacity or scope for landscape change to accommodate the proposed type of development. Usually applies to landscapes with of lesser landscape susceptibility or higher landscape capacity for the Proposed Development.

The level of landscape effects is not absolute and can only be defined in relation to each development and its location. It is for each assessment to determine the assessment criteria and thresholds using well informed and reasoned judgements.

The magnitude of landscape change arising from the Proposed Development at any particular location is described as Substantial, Moderate, Slight or Negligible based on the interpretation of a combination of largely quantifiable parameters, as follows:

- degree of loss or alteration to key landscape features/elements or characteristics;
- distance from the development;
- duration of effect;
- landscape backdrop to the development; and
- landscape context of other built development, particularly vertical elements.

In order to differentiate between different levels of magnitude the following definitions are provided:

Table A.2: Landscape magnitude of change definitions

Substantial	Total loss or extensive alteration to key landscape elements/features/ characteristics of the baseline, or introduction of uncharacteristic elements which would give rise to a fresh characterising effect.
Moderate	Partial loss or alteration to one or more key landscape elements/features/ characteristics of the baseline and/or introduction of elements that may be prominent, but not necessarily substantially uncharacteristic with the attributes of the receiving landscape (which could co-characterise parts of the landscape).
Slight	Minor loss or alteration to one or more key landscape elements/features/ characteristics of the baseline and/or introduction of elements that may not be uncharacteristic with the surrounding landscape or may not lead to a characterising or co-characterising effect.
Negligible	Very minor loss or alteration to one or more key landscape elements/features/ characteristics of the baseline and/or the introduction of elements that are not uncharacteristic of the surrounding landscape. Change would be barely distinguishable approximating to no change.

Having established where the observation of varying levels of change to the landscape baseline may occur, the geographical extent of the change can be identified and a judgement made as to the level of effect in landscape character terms at varying scales.

The importance of the effect on the landscape resource may be determined by correlating the magnitude of the landscape change (Substantial, Moderate, Slight or Negligible) with the sensitivity of the landscape resource (High, Medium or Low). The following table sets out the main correlations between magnitude and sensitivity.

Table A.3: Landscape effects matrix

Landscape sensitivity	Magnitude of Change				
		Substantial	Moderate	Slight	Negligible
	High	Major	Major/Moderate	Moderate	Minor
	Medium	Major/Moderate	Moderate	Moderate/Minor	Minor/Negligible
	Low	Moderate	Moderate/Minor	Minor	Negligible

Visual Effects

The sensitivity of potential visual receptors will vary depending on the location and context of the viewpoint, the activity of the receptor and importance of the view. Visual receptor sensitivity is defined as High, Medium, or Low in accordance with the criteria in Table A.4.

Table A.4: Visual sensitivity criteria

High Sensitivity	Residents within the curtilage of their homes; users of outdoor recreational facilities including footpaths, cycle ways and recreational road users; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas.
Medium Sensitivity	Road users and travelers on trains experiencing views from transport routes. People engaged in outdoor sport other than appreciation of the landscape, e.g. nature conservation, golf and water-based recreation.
Low Sensitivity	Workers, users of facilities and commercial buildings (indoors) experiencing views from buildings.

The magnitude of visual change arising from the Proposed Development at any particular location is described as Substantial, Moderate, Slight or Negligible based on the interpretation of a combination of largely quantifiable parameters, as follows:

- distance of the viewpoint/receptor from the development;
- duration of effect;
- extent of the development in the view;
- angle of view in relation to main receptor activity;
- proportion of the field of view occupied by the development;
- background to the development; and
- extent of other built development visible, particularly vertical elements.

It is assumed that the change would be seen in clear visibility and the assessment is carried out on that basis. Where appropriate, comment may be made on lighting and weather conditions. In order to differentiate between levels of magnitude the following definitions are provided in Table A.5:

Table A.5: Visual magnitude of change definitions

Substantial	Where the proposals would have a defining influence on the view. Change very prominent leading to substantial obstruction or complete change in character and composition of the baseline existing view.
Moderate	Where the proposals would be clearly noticeable and an important new element in the view. It may involve partial obstruction of existing view or partial change in character and composition of the baseline existing view
Slight	The proposals would be partially visible or visible at sufficient distance to be perceptible and result in limited or minor changes to the view. The character and composition, although altered will be similar to the baseline existing situation
Negligible	Change would be barely perceptible. The composition and character of the view would be substantially unaltered, approximating to little or no change.

The threshold for different levels of visual effects relies to a great extent on professional judgement. Criteria and local circumstances require close study and careful judgement.

Beneficial effects upon receptors may result from a change to a view by the removal of eyesores or through the addition of well-designed elements which add to the sense of place in a beneficial manner.

The following Table A.6 sets out the main correlations between magnitude and sensitivity.

Table A.6: Visual effects matrix

	Magnitude of Change				
Visual sensitivity		Substantial	Moderate	Slight	Negligible
	High	Major	Major/Moderate	Moderate	Minor
	Medium	Major/Moderate	Moderate	Moderate/Minor	Minor/Negligible
	Low	Moderate	Moderate/Minor	Minor	Negligible

Level of Effect

As per the matrices in Table A.3 and Table A.6; the level of any identified landscape or visual effect has been assessed in terms of Major, Moderate, Minor or Negligible. Intermediate correlations are also possible and depend upon professional judgement, e.g. Major/moderate. These categories are based on the juxtaposition of viewer or landscape sensitivity with the predicted magnitude of change. This matrix should not be used as a prescriptive tool but must allow for the exercise of professional judgement. Effects which area judged to be Major/Moderate or Major are considered to be notable. Where Moderate effects are predicted, professional judgement is applied to ensure that the potential for notable effects arising has been thoroughly considered.

Type of Effect

Landscape and visual effects are described with reference to type (direct, indirect, secondary or cumulative), timeframe (short, medium, long term, permanent, and temporary) and whether they are beneficial or adverse (beneficial or adverse). The various types of effect are described as follows:

Temporary / Residual Effects

If a proposal would result in an alteration to an environment whose attributes can be quickly recovered, then judgements concerning the significance of effects should be tempered in that light. Commercial development applications typically include permanent, long-term elements as well as minor alternations to landform resulting in residual landscape and visual effects.

Direct/Indirect

Direct and indirect landscape and visual effects are defined in Guidelines for Landscape and Visual Impact Assessment (GLVIA3). Direct effects may be defined "result directly from the development itself" (para 3.22). An indirect (or secondary) effect is one that results "from consequential change resulting from the development" (para 3.22) and is often produced away from the site of the Proposed Development or as a result of a complex pathway or secondary association. The direct or physical landscape effects of the Proposed Development would generally be limited to an area around the development itself. Any indirect landscape effects are concerned with the view of the changes from outside the local landscape.

Beneficial/Adverse

Landscape and visual effects can be beneficial or adverse, and in some instances may be considered neutral. Beneficial effects upon landscape receptors may result from changes to the landscape involving beneficial enhancement measures or through the addition of well-designed elements, which add to the landscape experience or sense of place in a complementary manner.

The landscape impacts of the Proposed Development have been considered against the landscape baseline, taking account of the landscape characteristics. Taking a precautionary approach, changes to rural landscapes involving construction of man-made objects of a large scale are generally considered to be adverse, as they are not usually actively promoted as part of a district wide landscape strategy and therefore in the assessment of landscape effects, they are assumed to be adverse, unless specified otherwise in the text.

It is important to recognise that for the same development, some may consider the visual effects for a development of this nature as adverse or beneficial. This depends to some extent on the viewer's predisposition towards landscape change but also the principle of commercial building features in the landscape. Taking a precautionary approach in making an assessment of the 'worst case scenario', the assessment considers that all effects on views which would result from the construction and operation of the Proposed Development to be adverse, unless specified otherwise in the text. It is noted, however, that not all people would consider the effects to be adverse.

Visualisation Methodology

Zone of Theoretical Visibility Maps

Computer generated Zone of Theoretical Visibility (ZTV) Maps have been prepared to assist in viewpoint selection and to indicate the potential influence of the Proposed Development in the wider landscape.

The ZTV in **Figure 1** has been prepared at 1:20,000 scale to indicate the extent of potential visibility on the basis of bare ground, and does not include the screening effects of intervening established tree cover or buildings. The ZTV in **Figure 2** illustrates the extent of potential visibility when including the screening effects of intervening established tree cover and buildings.

The ZTV indicates areas from which it might be possible to secure views of part, or parts, of the Proposed Development (based on its maximum height / elevation). However, use of the Visibility Maps needs to be qualified on the following basis:

- There are a number of areas within the Visibility Maps from which there is potential to view parts of the proposal, but which comprise open moorland, farmland, or other land where the general public do not appear to exercise regular access;
- The Visibility Maps do not account for the likely orientation of a viewer – for example when travelling in a vehicle.

The accuracy of the Visibility Maps has to be considered. In particular, the ZTV presented in **Figure 1** is generated from Ordnance Survey (OS) Landform Panorama digital data based on a gridded terrain model with 5m cell sizes. The resolution of this model cannot accurately represent small-scale terrain features, which can therefore give rise to inaccuracy in the predicted visibility. This can lead to underestimation of visibility (e.g. a raised area of ground permitting views over an intervening obstruction), or can lead to overestimation of visibility (such as where a roadside embankment obscures a view).

Appendix B: Landscape Character Sensitivity

The sensitivity of the Swansea Bay and South Wales Valleys NLCAs is assessed in detail below. Landscape sensitivity is not absolute and can only be defined in relation to each development and its location taking account of susceptibility as described in the methodology. To understand the sensitivity of a particular landscape and its location it is good practice to consider a range of criteria as set out in the table below.

The table below highlights the inherent sensitivities of this landscape to the development proposed, with reference to characteristics as described within Natural Resources Wales' *National Landscape Character Areas* and *LANDMAP* where relevant extracts from these online resources are included in italics.

Table B.1: Sensitivity of the Swansea Bay and South Wales Valleys NLCAs (3km Study Area)

Factors affecting the sensitivity	Lower Sensitivity	Higher Sensitivity	Characteristics of local landscape at the Site	Sensitivity Rating
Physical				
Scale	Medium	Large	Medium scale *Landform, field pattern/upland grazing boundary*	Medium
Openness	Enclosed/intimate/contained	Open/exposed/panoramic	Screened by woodland to west/northwest. Open in aspects from the east and south	Medium
Landform	Steeply undulating Incised valleys	Rolling/Undulating	*Rolling farmland mosaic on land ranging between 60m and 200m AOD* Topography of the Site is relatively flat	Medium
Land cover	Settled pattern of small to medium-scale fields, predominantly grassland/ grazing Extensive areas of woodland	Extensive areas of simple regular land cover (including farming and forestry) Open and exposed	*Valleys and rolling lowland (mosaic 20-50% wooded, hedgerow character)* Lowland mosaic >20% wooded	Medium
Complexity and patterns	Field Pattern/Mosaic Complex or irregular patterns	Simple patterns	*Hedgebanks* *Boundary changes as surrounding settlements expand into area*	Medium
Built Environment	Contemporary masts, pylons, industrial elements, buildings infrastructure, motorway, settlements	Rural/countryside character	*Detractor of overhead power wires on steel pylons. the southern area is also influenced by road noise from the busy M4* Remnants of former industry in locale	Medium
Overall physical sensitivity				Medium

Factors affecting the sensitivity	Lower Sensitivity	Higher Sensitivity	Characteristics of local landscape at the Site	Sensitivity Rating
Perceptual				
Wildness / Sense of Remoteness	Busy evidence of human activity	Countryside/agricultural	Heavy influence of electrical infrastructure. Impact of urban fringe/busy motorway	Low
Perception of Change	Dynamic landscape, historically influenced and impacted through land use Presence of renewable energy infrastructure (solar and BESS)	Ancient landscapes with obvious historical continuity	Vertical elements such as large-scale electricity pylons are dominant in the landscape. *Detractor of overhead power wires on steel pylons. the southern area is also influenced by road noise from the busy M4* Influence of new energy infrastructure/change from agriculture	Medium
Overall Perceptual Sensitivity				Medium / Low
Visual				
Landscapes that form settings, skylines, backdrops, focal points	Infrastructure impacted landscapes Landscapes without distinctive landform or horizon	Views from lower valleys to uplands Areas with strong features, focal points that define the setting or skyline	Visually busy/impacted valley/upland fringe landscape with neighbouring upland landscape often forming a backdrop Some views over lower valley landscape	Medium
Views intervisibility	Visually contained and have limited inward or outward views	Guided views within or of the area with distant horizons.	Variety of intimate enclosure, some guided views, and views of expansive uplands/backdrop	Medium
Overall Visual Sensitivity				Medium

Factors affecting the sensitivity	Lower Sensitivity	Higher Sensitivity	Characteristics of local landscape at the Site	Sensitivity Rating
Value				
Rarity	Common	Rare	Loss of historic agricultural hedgebanks/field boundary vegetation Common pattern and form to landscape	Medium
Designated scenic quality	No specific designation	Local designation	Not designated	Medium / Low
Cultural associations	No specific cultural associations	Limited cultural association	Agricultural	Medium
Amenity and recreation	Limited amenity function Degraded path network	Network of public rights-of-way	Public rights-of-way (overgrown und under used)	High
Overall Value				Medium
Overall Sensitivity of the Swansea Bay and South Wales Valleys NLCAs				**Medium**

Appendix C: LVA Figures

- Figure 1 – Zone of Theoretical Visibility
- Figure 2 – Zone of Theoretical Visibility with Screening
- Figure 3 – National Landscape Character Areas (NLCAs)
- Figure 4 – Landscape Designations, Ancient Woodland and Recreational Routes
- Figure 5 – Residential Receptors
- Figure 6 – ZTV with Screening and Viewpoints
- Figure 7 – Cumulative Development;
- Drawing L01 – Landscape Mitigation Masterplan
- Swansea 100MW BESS Aerial Graphics (CGI)