Fferm Solar Larnog

Environmental Statement

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Fferm Solar Larnog

EIA Scoping Report

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Issue Sheet

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EIA Scoping Report

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Glossary

Term	Description
Baseline	The baseline conditions are the conditions that would exist in the absence of any proposed development either (a) at the time that construction is expected to start, for impacts arising from construction or (b) at the time that the Development is expected to open to traffic, for impacts arising from its operation.
Construction Environmental Management Plan	Document setting out the roles and responsibilities, control measures, training and briefing procedures, risk assessments and monitoring systems to be employed during planning and construction of the works for all relevant environmental topic areas.
Construction Traffic Management Plan	Document setting out the roles and responsibilities, control measures, risk assessments, mitigation and monitoring systems in relation to traffic and transport to be employed during construction of the proposed development.
Cumulative effects	Effects upon the environment that result from the incremental impact of an action when added to other past, present or reasonably foreseeable actions. Each impact by itself may not be significant but can become a significant effect when combined with other impacts
Environmental Impact Assessment	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement.
Environmental Statement	A document produced in accordance with the EIA Directive as transported into UK law by the EIA Regulations to report the results of an EIA.
European Protected Species Mitigation Licence	European Protected Species (such as bats) receive full protected under The Conservation of Species and Habitat Regulations 2010. A European Protected Species Mitigation Licence permits otherwise prohibited action under the above legislation.
Extended Phase 1 habitat survey	A classification system used to record semi-natural vegetation, notable / protected habitats, and habitats with the potential to support notable / protected species. Each habitat type / feature is defined by way of a brief description and is allocated a specific name, an alpha-numeric code, and unique mapping colour.
Flood Consequence Assessment	A document that details how flooding could affect a proposed development and is usually submitted with a planning application.
Flood risk	The exposure, vulnerability and hazard associated with flooding.
Flood zone	Zones referring to the probability of river and sea flooding, ignoring the presence of defences. Flood zone 3 shows the area that could be affected by a 1 in 100 year (1% chance) flood event. Flood zone 2 shows the area that could be affected by a major flood (1 in 1000, or 0.1% chance). Flood zone 1 shows areas that are very unlikely to experience flood (<0.1%).
Habitat Regulations Assessment	A formal assessment of the implications of any new plans or projects that may be capable of affecting the designated interest features of European Sites before deciding whether to undertake, permit or authorise such a plan or project.
Heavy goods vehicle	Goods vehicle with a gross weight of more than 3.5 tonnes.

Term	Description
Heritage assets	The historic environment assets such as archaeological remains, historic buildings and historic landscapes which have archaeological, architectural, artistic or historic value.
Historic Environment	The physical evidence of past human activity, comprising below ground heritage assets (archaeology), and above ground heritage assets (buildings, structures, landscapes).
Historic landscape type	The current landscape, whose character is the consequence of the action and interaction of natural and / or human factors.
Historic setting	The setting of an asset is the surroundings in which a place is experienced, while embracing an understanding of perceptible evidence of the past in the present landscape.
Landscape and Ecological Management Plan	Document setting out the management, mitigation and monitoring with regards to landscaping and ecology during the operation of the proposed development.
Landscape and visual impact assessment	A process that identifies the effects of new developments on views and on the landscape, supported by GLVIA3.
Landscape Character Area	Single unique areas which are the discrete geographical areas of a particular landscape type. Each will have its own individual character and identity, even though it shares the same generic characteristics with other areas of the same type. The English territory is classified in landscape character areas either at national and local level.
Listed building	A building or structure designated under Section 69 of the Planning (Listed Building and Conservation Areas) Act 1990 as being of “special architectural or historic interest”.
Local Planning Authority	The public authority whose duty it is to carry out specific planning functions for a particular area.
Magnitude	The scale, size or degree of change (impact) to the environment from an action upon it.
Mitigation	The action of reducing the severity and magnitude of change (impact) to the environment. Measures to avoid, reduce, remedy or compensate for significant adverse effects.
Native species	Native species are species that have become part of an ecosystem through natural processes and have not been introduced outside their range by human activity.
Potential effect	The predicted consequential change that may occur upon the environment because of a development, in the absence of mitigation.
Public Right of Way	A widely known right to cross private land is known as a 'right of way'. If this is a right granted to everyone it is a 'public right of way'.
Receptor	A defined individual environmental feature usually associated with population, fauna and flora that have potential to be impacted by a development.
Residual effect	The predicted consequential change on the environment from the impacts of a development after mitigation.

Term	Description
Scoping	The process of identifying the issues to be addressed by an environmental impact assessment process. It is a method of ensuring that an assessment focuses on the important issues and avoids those that are considered unlikely to be significant. This process is documented in a Scoping report, which in turn is used to request a formal Scoping Opinion.
Screening	Procedure used to determine whether a proposed project is likely to have significant effects on the environment, and if a formal EIA will be required (documented in an
Sensitivity	Receptor or resource environmental value.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Site of Nature Conservation Importance	Sites of Nature Conservation Interest are sites which contain features of substantive nature conservation value at a local level.
Site of Special Scientific Interest	A site of national importance due to its wildlife or geological value that is protected by the Wildlife and Countryside Act 1981 (as amended).
Special Area of Conservation	A site designated under the Habitats Directive due to its international value for certain habitats and species of conservation importance (those listed on Annex I and II of the Directive).
Special Protection Area	A site designated under Council Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive') due to its international importance for birds.
Water Framework Directive	EU water legislation that came into force in 2000, with the overarching objective to get all water bodies in Europe to attain Good or High Ecological Status. River Basin Management Plans have been created which set out measures and potential mitigation to ensure that water bodies in England and Wales achieve 'Good Ecological Status'.
Zone of theoretical visibility	These model the areas of land within which a development will be theoretically visible based on 'bare earth' terrain, that is without taking account of intervening physical features such as existing vegetation and built development

1. Introduction

1.1 Background

1.1.1 This Environmental Impact Assessment (EIA) Scoping Report has been produced on behalf of Trydan Gwyrdd Cymru (hereafter the 'Applicant') and considers the construction, operation and decommissioning of the proposed Larnog Solar Farm and associated infrastructure including substation and a Battery Energy Storage System (BESS) (hereafter the 'Proposed Development').

1.1.2 The Proposed Development would be located on land approximately 500m south-west of Penarth and 550m east of Sully (hereafter the 'Proposed Development Area'). The Proposed Development Area is approximately 32 hectares (ha) in size and largely comprises agricultural land with defined field boundaries and pockets of woodland.

1.1.3 There are two boundaries presented in this EIA Scoping Report, as shown on **Figure 5 (Appendix A)**:

- **Site Boundary (the Site)**: This outlines the land parcels under Applicant ownership. The overall size of the Site is 115 ha; and
- **Proposed Development Area**: This outlines the physical extent of the proposed infrastructure.

1.1.4 Further information on the Site is provided in **Section 2**, and a description of the Proposed Development is provided in **Section 3**.

1.2 Definition of an Environmental Impact Assessment (EIA)

1.2.1 The term EIA describes a process that must be followed for certain types of projects when making a planning application. The iterative process is a means of drawing together, in a systematic way, an assessment of a project's likely significant environmental effects. This helps to ensure that the importance of the predicted effects and the scope for avoiding, preventing, reducing or, if possible, offsetting them are properly understood by the public and the authority responsible for determining whether to grant planning permission for the application before it makes its decision.

1.3 Requirement for Environmental Impact Assessment

1.3.1 Under the Town and Country Planning (Environmental Impact Assessment) (Wales) regulations 2017 (hereafter referred to as the 'EIA Regulations'), the Proposed Development falls within the description of energy industry development in paragraph 3 of Schedule 2 of the EIA Regulations 2017 as an 'industrial installation for the production of electricity'. The Proposed Development exceeds the applicable threshold for this type of development because the area of development exceeds 0.5 hectares.

1.3.2 Under regulation 6 of the EIA Regulations, a request for an EIA Screening Opinion was submitted to the Vale of Glamorgan Council (hereafter 'the Council') on 16 December 2025, following pre-application advice received from the Council in relation to the Proposed Development.

1.3.3 A Screening Opinion (**Appendix B**) was issued by the Council on 27 March 2026 and, having considered the selection criteria in Schedule 3 of the EIA Regulations and the advice in Welsh Office Circular 11/99: Environmental Impact Assessment on establishing whether EIA is required, the Council concluded that the Proposed Development constitutes 'EIA development' within the meaning of the EIA Regulations. The Council noted that the Proposed Development constitutes 'EIA development' due to:

- The size of the Proposed Development and the local context;
- The potential for significant adverse landscape and visual impacts;
- Impacts to mineral resource of national importance;
- Impacts to protected sites and species; and
- Impacts to archaeological resources.

1.3.4 In acknowledgement of the Council's EIA Screening Opinion, the Applicant will prepare and submit an Environmental Statement (ES) in support of the planning application for the Proposed Development.

1.4 Purpose of this Report

1.4.1 The aim of the EIA process is to ensure that the Proposed Development has due regard for the environment, minimises adverse environmental effects, and takes advantage of opportunities for environmental enhancement.

1.4.2 Every Environmental Statement must contain at least the information prescribed by regulation 17(3) of the EIA Regulations 2017, including a full description of the Proposed Development, and a description of the likely significant effects of the Proposed Development on the environment. The emphasis of regulation 17(3)(b) and paragraph 5 of Schedule 4 is on the "significant" environmental effects to which a development is likely to give rise, be they direct or indirect, secondary, cumulative, transboundary, short, medium or long term, permanent or temporary and beneficial or adverse.

1.4.3 The process of identifying the likely significant effects to consider within the ES and establishing the scope of the assessment is known as 'scoping'. Although scoping is not a mandatory requirement under the EIA Regulations, it is recognised as a useful preliminary procedure that helps to identify the main effects that a proposed development is likely to have on the environment.

1.4.4 This Scoping Report has been prepared in support of the Applicant's request under regulation 14 of the EIA Regulations 2017 for the Council to prepare a Scoping Opinion concerning the scope of information to be provided in the Environmental Statement. The report provides information on the Site location, the Proposed Development, the likely significant effects on the environment, and any other such information as is relevant, including the proposed approach to assessment, in specific accordance with regulation 14 of the EIA Regulations 2017.

1.4.5 The information contained within this Scoping Report is based on initial design and environmental studies carried out by the EIA team to date. This level of detail should be sufficient to assist the Council in their consideration of the proposed scope and content of the EIA and ES.

1.4.6 Overall, and in line with best practice, this scoping exercise aims to achieve the following objectives:

- Establish the availability of existing baseline data;
- Define a survey and assessment framework from which a comprehensive EIA spanning those environmental topics which are likely to experience significant environmental effects can be undertaken; and
- Invite statutory and non-statutory consultees to comment on the proposed EIA, in terms of:
    - The potential significant environmental effects which require assessment;
    - The assessment methodology for each environmental topic proposed to be scoped into the EIA process;
    - Sources of information;
    - Issues of perceived concern; and
    - Any other areas which should be addressed in the assessment.

1.4.7 **Table 1-1** sets out what information the EIA Regulations 2017 state that a request for a scoping opinion must include and where this information can be found in this report, in specific accordance with regulation 14(2)(a).

Table 1-1: Information Required to Accompany a Request for a Scoping Opinion

Information Required	Location within this report
A plan sufficient to identify the land	**Figure 1 (Appendix A)**
A description of the nature and purpose of the development, including its location and technical capacity	**Section 3**
An explanation of the likely significant effects of the development on the environment	**Section 6-9**
Such other information or representations as the person making the request may wish to provide or make	**Section 2, Section 4, Section 4, and supporting Appendices**

1.5 EIA Team

1.5.1 WSP has been commissioned to prepare this EIA Scoping Report. The EIA team responsible for its preparation comprises a range of experienced topic specialists. A statement confirming the competence and relevant expertise of those preparing the EIA will be included as part of the ES submission.

1.5.2 WSP is a registrant of the Institute of Sustainability and Environmental Professionals (ISEP) Quality Mark, reflecting the high standard of the EIAs delivered for development proposals. In achieving this accreditation, WSP demonstrates adherence to the core commitments of the ISEP Quality Mark and compliance with the requirements as set out in Regulation 17(4) of the Town and Country Planning (Environmental Impact Assessment) (Wales) regulations 2017.

1.6 Structure of the EIA Scoping Report

1.6.1 The structure of this report is as follows:

- **Section 1**: Outlines the purpose of the report and provides an overview of the Proposed Development and the requirement for EIA.
- **Section 2**: Provides a description of the Site, surroundings, and design evolution of the Proposed Development.
- **Section 3**: Provides a description of the nature and purpose of the Proposed Development.
- **Section 4**: Provides a description of the approach to the EIA including cumulative effects.
- **Section 5**: Outlines the environmental topics which have been scoped out of the EIA and the reasoning.

- **Section 6 to 9**: Each section provides the scope of works for each environmental topic that has been scoped into the EIA. For each of the topic areas, the following is provided:
  - Study area and sensitive receptors.
  - Relevant consultation carried out to date.
  - Baseline conditions.
  - Environmental impacts which will not give rise to significant effects (where possible).
  - Likely significant effects (for both the construction and operational phases).
  - Proposed methodology for assessment including cumulative effects.
  - Limitations and assumptions.
- **Section 10**: Provides a summary of the environmental factors which have been 'Scoped In' to the EIA and the proposed structure of the ES.

2. The Site, Surroundings, and Design Evolution

2.1 The Site and Surroundings

Site Location

2.1.1 The Site is located within the Council's authority area, between the settlements of Penarth and Sully. The Site comprises approximately 115ha of agricultural land, with defined hedgerow boundaries and clusters of woodland. The land is owned and managed by Welsh Government. The Site is bound to the west by the B4267 Lavernock Road, and the Glamorgan Coast to the east and south. To the north, the Site is bound by Ysgol Llyn Derw, which is currently under construction, and a proposed mixed-use development, known as Upper Cosmeston Farm, which received outline planning approval in 2024.

2.1.2 The Site boundary is presented in **Figure 1 (Appendix A)**. Environmental and technical features which are relevant to the site and surroundings are presented in **Figure 2 (Appendix A)**.

Access and Recreation

2.1.3 The Site is currently accessed via Fort Road and St Mary's Well Bay Road, both roads adjoin the wider highway network via the B4267 Lavernock Road. Fort Road provides access to residential properties, St Lawrences Church, Lavernock Nature Reserve, and Lavernock Point Holiday Estate. St Mary's Well Bay Road provides access to residential properties, The Bay Caravan Park, and Swanbridge Bay Beach.

2.1.4 A disused railway track runs from east to west across the Site. The Council are proposing to construct an Active Travel Route (ATR) along the disused railway. A planning application for the ATR was approved in October 2025.

2.1.5 The Wales Coastal Path runs from north to south, inside the eastern boundary of the Site before heading inland along Fort Road, through the Lavernock Point Nature Reserve, around The Bay Caravan Park, before connecting into St Mary's Well Bay Road. The Wales Coastal Path incorporates Public Footpaths L1/2/1, L1/7/1, L1/8/1 and L1/5/1, all of which intersect the Site. Additionally, L1/5/2 connects the Wales Coastal Path (from L1/5/1) to Fort Road and is mostly within the Site.

Ecology and Biodiversity

2.1.6 The Site is not covered by any statutory ecological designations.

2.1.7 The Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), RAMSAR and Site of Special Scientific Interest (SSSI) is located immediately east of the Site.

2.1.8 There are four SSSI's located within 2km of the Site; the Penarth Coast SSSI located adjacent to the south-eastern boundary of the Site, Llynnoedd Cosmeston / Cosmeston Lakes SSSI located approximately 125m to the north, Sully Island SSSI located 600m to the south, and Cog Moors SSSI located 1.2km to the north-west.

2.1.9 The Cosmeston Lakes Country Park Local Nature Reserve (LNR) is located to the north of the Site. The Lavernock Point Nature Reserve sits adjacent to the south-eastern boundary of the Site, two-thirds of the nature reserve overlaps with the Penarth Coast SSSI.

2.1.10 There are two Sites of Importance for Nature Conservation (SINC) located within the Site boundary, Lavernock Point East and Ty-r-Orsaf. The Site also falls within the boundary of a B-Lines area (a non-statutory designated site). B-Lines are a series of 'insect pathways' which have been established by Buglife and act as a restorative series of wildflower rich-habitat stepping stones, linking existing wildlife areas together for bees and butterflies.

2.1.11 There is no ancient woodland within the Site boundary.

Historic Environment

2.1.12 The Site does not contain any nationally designated heritage assets, such as Scheduled Monuments, listed buildings, Registered Parks and Gardens, or locally listed buildings.

2.1.13 There are eight Grade II listed buildings within the 1km study area around the Site, which include the Original House at Lower Cosmeston Farm (Cadw ref. 87852) located approximately 180m north of the Site, Church of St Lawrence (Cadw ref. 24060) located 95m south-east of the Site, and Swanbridge House (Cadw ref. 26974) located 230m south-west of the Site.

2.1.14 There are three scheduled ancient monuments (SAM) within the 1km study area. These are the Anti-aircraft and Coastal Battery West of Lavernock Point (SAM number GM448) located approximately 65m east of the Site, St Mary's Well Bay Pillbox (SAM number GM619) situated 130m south of the Site, and Sully Island "Danish Fort" (SAM number GM035) situated 630m southwest of the Site.

2.1.15 Within the 5km study area there are a further 19 scheduled monuments, 106 listed buildings, including three Grade I, eight Grade II* and 95 Grade II, five Conservation Areas, and four Registered Parks and Gardens.

2.1.16 The Penarth conservation area is located approximately 1.7km north of the Site.

Water Resources

2.1.17 There are no statutory main rivers within the Site. The nearest main river is Sully Brook located approximately 130m north-west of the Site. Cosmeston Lakes are located approximately 230m from the Site.

2.1.18 Small parts of the Site are at risk of flooding from surface water and small watercourses, as they are in flood zones 2 and 3. As shown in **Figure 2 (Appendix A)**, these areas are broadly located towards the outer edges of the Site boundary and can be avoided through careful design.

2.1.19 The Site is not located within any Source Protection Zones (SPZ).

2.1.20 There are small areas of standing water and several drainage ditches within the Site.

Air Quality

2.1.21 There are no Air Quality Management Areas (AQMAs) or Noise Action Planning Priority Areas (NAPPA) within or close to the Site.

Land and Soils

2.1.22 A review of the Welsh Government Predictive Agricultural Land Classification (ALC) Map[1] identifies that the Site contains Grade 3b and 4 land which is not considered to constitute Best and Most Versatile (BMV)[2]. Please refer to **Figure 3 (Appendix A)**.

Existing Infrastructure

2.1.23 Above ground, there are several overhead power lines which cross the Site and feed into residential properties. Below ground, utility searches have identified water pipes, foul drainage pipes, and telecommunication lines which also feed into residential properties.

2.2 Need, Alternatives and Design Evolution

2.2.1 The EIA Regulations 2017 require that the ES should include:

"A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the applicant or appellant which are relevant to the proposed development and its specific characteristics and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects". (Schedule 4(2))

[1] Welsh Government, (2025) Data Map Wales: Predictive Agricultural Land Classification (ALC) Map 2. Available online at: https://datamap.gov.wales/layers/inspire-wg:wg_predictive_alc2

[2] Welsh Government, (2025). Agricultural land classification: predictive map guidance. Available online at: https://www.gov.wales/agricultural-land-classification-predictive-map-guidance

2.2.2 The ES will fulfil the requirements of the EIA Regulations through identifying the need for the Proposed Development and the reasonable alternatives (i.e. site location, alternative design, layouts, and access) considered by the Applicant, explaining the main reasons for the choices made. It will also provide a summary of the design evolution of the Proposed Development, setting out how and where design decisions were made to avoid potentially significant effects.

Design Principles and Evolution

Introduction

2.2.3 This section explains how good design has been embedded into the Proposed Development from the outset of the design process. Good design is important and has a direct effect on the communities that host renewable energy projects. It is as much about processes and behaviours as it is about delivering design outcomes that support sustainable development.

2.2.4 In Wales, the design of renewable energy projects is the subject of key policy documents and guidance notes. In 2023, the Design Commission for Wales published Designing for Renewable Energy in Wales[3] which sets out criteria for good design of energy infrastructure. Whilst the document is not a policy document, it is informed by Planning Policy Wales[4], Future Wales: The National Plan 2040[5] and the Well-being of Future Generations Act 2015[6]. The Applicant has utilised this document throughout the iterative design process for the Proposed Development, with due consideration to the Design Objectives set out in Section 4.2 and Section 6 of Designing for Renewable Energy in Wales.

2.2.5 In addition, the Applicant has had regard to relevant policies contained in the Vale of Glamorgan Council's Local Development Plan 2011-2026, which is also supported by Supplementary Planning Guidance (SPG) for renewable energy[7]. Whilst the SPG is not explicitly targeted at the design of large-scale renewable energy developments, particular attention has been given to the planning considerations for such developments, as set out in Chapter 7 of the Local Development Plan.

[3] Design Commission for Wales, (2023). Designing for Renewable Energy in Wales. Available online at: https://www.gov.wales/sites/default/files/publications/2023-12/designing-for-renewable-energy-in-wales.pdf
[4] Welsh Government, (2024). Planning Policy Wales, Edition 12. Available at: https://www.gov.wales/planning-policy-wales
[5] Welsh Government, (2021). Future Wales: The National Plan 2040. Available online at: https://www.gov.wales/future-wales-national-plan-2040-0
[6] Well-being of Future Generations (Wales) Act 2015. Available online at: https://www.legislation.gov.uk/anaw/2015/2/contents
[7] Vale of Glamorgan Council, (2019). Supplementary Planning Guidance: Renewable Energy. Available online at: https://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Policy/SPG/Renewable-Energy-SPG-March-2019.pdf

Design Evolution

2.2.6 This section summarises the design evolution of the Proposed Development to date. It explains how the area proposed for development has evolved and reduced through the design process. It explains how the spatial layout of the Proposed Development has been shaped by the environmental and technical assessment process.

Site Selection

2.2.7 The Site has been selected as being suitable for ground-mounted solar PV development for the following reasons:

- Lies within an area of suitable irradiance and favourable topography.
- Does not have any Best and Most Versatile (BMV) land.
- Has sufficient land to enable the grid connection offer to be maximised while maintaining sufficient offsets to sensitive residential receptors.
- Does not have any international or national environmental designations within the holding.
- Is accessible from the road network and has suitable access to land not immediately adjacent the strategic road network.

Design Point 1

2.2.8 Following the initial site selection by the Applicant, the Site was subject to a preliminary assessment. The purpose of the assessment was to identify the opportunities and constraints of the Site and identify potential land parcels which could support the Proposed Development.

2.2.9 The assessment, which included site visits and desktop analysis (using Geographical Information Systems (GIS)), considered known environmental, engineering, and technical factors/receptors. As part of the assessment, the following design principles informed the design output:

- Avoidance of International, National, and Local Ecological Designations: Including International designations (e.g. SPA), National designations (e.g. SSSI), and Local designations (e.g. SINC).
- Avoidance of known heritage assets: Including Registered Gardens and Designed Landscapes, Registered Battlefields, World Heritage Sites, Listed Buildings, Conservation Areas and Scheduled Ancient Monuments.
- The pattern of settlement, topography, and land use: Identification of residential properties and settlements, avoidance of steep gradients (not suitable for energy infrastructure), and publicly accessible areas/routes.

- Avoidance of woodland, trees, and hedgerows: A 10m buffer was applied to all field boundaries to avoid all habitats within the Site boundary. Records of all areas of woodland were drawn from aerial base mapping and publicly accessible datasets.
- Existing infrastructure: Including overground and underground utilities, other buildings, and roads.

2.2.10 The land parcels considered suitable for development were taken forward for further design analysis. Please refer to **Figure 4 (Appendix A)**.

Design Point 2

2.2.11 To refine the potential land parcels suitable for ground-mounted solar PV development, the Applicant commissioned several studies to support the design process:

- Preliminary Ecological Appraisal (PEA): WSP was commissioned to undertake a PEA in January 2025. The PEA was informed by a Phase 1 habitat survey and Daytime Bat Walkover (DBW) of habitats within and in proximity to the Site.
- Draft Historic Environment Desk-Based Assessment (HEDBA): WSP was commissioned to provide a draft HEDBA of the Site in February 2025. The HEDBA has been informed by a site walkover and interrogation of historic mapping, Historic Environment Records (HER), and consideration of archaeological evaluation works completed at neighbouring sites.
- Initial Landscape and Visual Appraisal: WSP was commissioned to provide a landscape and visual appraisal of the Site in February 2025. The aim of the study was to assess the Site's suitability for accommodating a solar development. The appraisal was informed by a site walkover.

2.2.12 Preliminary PV capacity study: Based on the early GIS work, an indicative ground-mounted solar PV layout was developed for the Site. The study provided detail on fields which aren't considered suitable for development (due to their size) and accessibility across the Site.

2.2.13 The project team held an inter-disciplinary workshop to review the outcomes of each study and further consider the suitability of each field to accommodate ground-mounted solar PV development. As part of the workshop, each field was numbered and subsequently assigned a suitability rating (Good, Moderate, Poor). Reasons for assigning a 'Poor' rating included:

- Topography, steeper inclines, and proximity to recognisable landscape features, including Hopkins Mount.
- Proximity to residential properties and St Lawrences Church.
- Potential views from residential properties and public roads.
- The practicalities of locating infrastructure in smaller fields and accessibility.

2.2.14 Only fields identified as Good or Moderate were taken forward as part of the design process. Please refer to **Figure 4 (Appendix A)**.

Design Point 3

2.2.15 Those fields identified as suitable for ground-mounted solar PV development were subject to further environmental, engineering and technical surveys, as follows:

- Preliminary Risk Assessment (PRA): In July 2025, WSP was commissioned to complete a Geo-Environmental PRA of the Site. As part of the work, WSP developed a preliminary Conceptual Site Model (CSM) to identify potential contamination risks associated with the Proposed Development and highlighted any environmental considerations (i.e. potential risks / constraints) with respect to ground, ground gas and groundwater conditions.
- Geophysical Survey: In July 2025, Dyfed Archaeological Services, a contracting arm of Heneb: the Trust for Welsh Archaeology, were commissioned to prepare a Written Scheme of Investigation (WSI) for a Geophysical Survey of the Site, and, subsequently, carry out and report on the Geophysical Survey.
- Bat Surveys: Bat surveys, in the form of static detector surveys, night-time walkover surveys, and Potential Roost Feature (PRF) aerial inspection surveys, have been undertaken throughout 2025 (Spring: April-May; Summer: June-July-August; and Autumn: September-October).

2.2.16 The project team held an inter-disciplinary workshop to review the outcomes of each study and further consider the suitability of each field to accommodate ground-mounted solar PV development. The following design changes were implemented as part of the workshop:

- Removal of proposed fields east of Fort Road:
    - The geophysical survey identified anomalies in several fields towards the east of the Site, indicating the potential presence of buried archaeological features. Please refer to **Appendix C – Geophysical Survey Report**.
    - The project team were concerned with views from the Wales Coastal Path across the eastern part of the Site. There are large parts of the Site exposed following recent footpath alterations along the Wales Coastal Path due to coastal erosion.
- Increased separation from residential properties: The potential infrastructure footprint in two fields, one to the west of St Mary Well Bay Road and one to the west of Fort Road, was reduced to increase the separation distance from residential properties.

2.2.17 The remaining fields (and in some cases, sections of field) formed the basis of the potential areas for ground-mounted solar PV development. Please refer to **Figure 4 (Appendix A)**.

Design Point 4

2.2.18 In addition to the proposed areas for ground-mounted solar PV development, the Proposed Development will include a project substation, BESS, and other associated infrastructure. The project substation, BESS, and associated infrastructure would be located within one compound measuring approximately 65m in length and 65m in width. To identify suitable locations for a compound of this size, the following design considerations have informed the site selection process:

- Proximity to residential properties and Public Rights of Way (PRoW): The compound should be located away from residential properties and PRoW to reduce any potential amenity effects (visual and noise).
- Proximity to public highway: The compound should be located close to the public B4267 (Lavernock Road) to facilitate access.
- Explore opportunities for natural screening: Potential land parcels for accommodating the compound should be based on topography and screening from existing woodlands or tree belts that may help to reduce the landscape and visual impact of these elements.

2.2.19 Two areas within the Site were identified as suitable for the compound, both areas are located within a large field to the west of St Mary Well Bay Road. Please refer to **Figure 4 (Appendix A)**.

Design Point 5

2.2.20 A further design review was undertaken following receipt of the EIA Screening Opinion and Pre-Application Advice from the Council. The following changes were applied to the design:

- Removal of any infrastructure within the triangular field located adjacent to the B4267 Lavernock Road and St Mary's Well Bay Road.
- Increased the separation distance (up to 20m) between the Wales Coastal Path and infrastructure in two fields located immediately to the east of The Bay Caravan park.
- Refined the located of the Project Substation Compound. Following advice from the Council, the Project Substation Compound was located outside areas designated for mineral safeguarding.

2.2.21 The revised design forms the basis of the Proposed Development presented as part of this EIA Scoping Report. Please refer to **Section 3** for further detail.

3. Description of the Proposed Development

3.1 Introduction

3.1.1 This Section provides a description of the Proposed Development for the purposes of identifying and reporting any potential significant environmental impacts in this EIA Scoping Report.

3.1.2 While the final design has not been confirmed, all potential significant effects from the construction, operation and decommissioning of the Proposed Development have been considered within this EIA Scoping Report.

3.1.3 The expected area of land potentially required for the construction, operation, maintenance and decommissioning of the Proposed Development, which includes land required for permanent and temporary purposes, is shown as the Proposed Development Area in **Figure 5 (Appendix A)**. The Proposed Development Area represents the envisaged current maximum extent of land which is required to construction and operate the Proposed Development.

3.2 Operational Design of the Proposed Development

3.2.1 This section describes the main features of the Proposed Development which will consist of the following:

- Ground mounted solar PV generating station with a gross electrical output capacity to the distribution grid network in the region of 35MW. The generating station will include solar PV modules and mounting structures.
- Project substation compound, which will include substation, switching and control equipment, storage areas, and provisions for vehicular parking and material laydown.
- Battery Energy Storage System (BESS) which will include inverters, transformers, switchgear and ancillary equipment and their containers, enclosures, monitoring systems, air conditioning, electrical cables and fire safety infrastructure.
- Balance of Solar System (BoSS) which comprises, inverters, transformers, switchgear.
- Ancillary infrastructure works including underground cables, boundary treatments, security equipment, lighting, weather stations, landscaping, access tracks, earthworks, surface water management, and any other works identified as necessary to enable the development.
- Landscaping, habitat management, biodiversity enhancement and amenity improvements.

3.2.2 An indicative layout of the Proposed Development is shown on **Figure 5 (Appendix A)**.

Ground Mounted Solar PV Generating Station

Potential Areas for Solar PV Generating Stations

3.2.3 The potential areas within the Proposed Development Area considered suitable for the solar PV generating station are presented in **Figure 5 (Appendix A)**.

Solar PV Modules

3.2.4 Solar PV modules convert sunlight into electrical current (as direct current (DC)). Solar PV modules are made up of individual solar cells. They are typically 2m long and up to 1m wide and consist of a series of photovoltaic cells beneath a layer of toughened glass. The frame is typically built from anodised aluminium or steel. Bifacial PV modules use a glass backsheet instead of an aluminium backsheet. This allows solar irradiance to be absorbed from the rear-side of the module as well.

3.2.5 The solar PV modules are fixed to a mounting structure in groups known as 'strings'. Various factors will help inform the number and arrangement of the solar PV modules in each string, and it is likely some flexibility will be required to accommodate for future technology developments.

Mounting Structures

3.2.6 Each string of solar PV modules will be mounted on a metal rack, known as a mounting structure. The mounting structure are usually supported by galvanized steel poles, pile-driven into the ground. There is also an option for some structure legs to be supported by concrete footings to reduce piling depths, if required due to the ground conditions or to reduce impacts on areas of archaeological sensitivity.

3.2.7 The mounting structure carrying the solar PV modules will be designed to face southwards on a fixed-tilt mounting structure or on a tracking platform. The solar PV modules would be angled at a slope of 10 to 30 degrees from horizontal to optimise daylight absorption.

3.2.8 Once attached to the mounting structure, the minimum height of the lowest part of the solar PV modules will be approximately 60cm above ground level (AGL) and the maximum height of the solar PV modules will be approximately 4m AGL. The height for each solar PV module can be influenced by several design factors including, flood risk (and associated historic flood levels), local topography, visual receptors, land use practices, and the solar PV module type and configuration.

3.2.9 The key design components of the Proposed Development are set out in this section. An indicative layout of the Proposed Development is illustrated on **Figure 5 (Appendix A)**.

Balance of Solar Systems (BoSS)

3.2.10 The BoSS refers to the components and equipment that convert the DC electricity collected by the solar PV modules into alternating current (AC). Primarily, this includes inverters, transformers, and switchgear:

- Inverters: Inverters are required to convert the DC electricity collected by the PV modules into AC, which allows the electricity generated to be exported to the grid. Inverters are sized to cope with the characteristics of the DC electricity that is output from the solar PV modules. Inverters can be either central or string type.
- Transformers: Transformers are required to step up the voltage of the electricity generated across the Proposed Development Area before it reaches the Project Substation.
- Switchgear: Switchgears are the combination of electrical disconnect switches, fuses or circuit breakers to control, protect and isolate electrical equipment. Switchgear is used both to de-energise equipment to allow work to be done and to clear faults downstream.

3.2.11 The BoSS equipment will be housed within an Inverter and Transformer Station (ITS). Typically, for a project of this scale, there would be a requirement for approximately 4 ITS. The ITS are typically the size of a shipping container, approximately 6m x 3m in plan, and up to approximately 3m in height. The ITS would be painted in a colour in keeping with the prevailing surrounding environment, often with a green painted finish. The ITS would be located within fields identified as suitable for the ground mounted solar PV generating station.

Project Substation Compound

3.2.12 Based on the early site selection work completed by the Project Team, the Project Substation location is presented in **Figure 5 (Appendix A)**.

3.2.13 The Project Substation will facilitate the export of electricity from the Proposed Development to the distribution grid network (see **paragraph 3.2.29**).

3.2.14 The Project Substation compound will include electrical infrastructure (such as the transformers, switchgear and metering equipment), office space, material storage and welfare facilities, as well as operational monitoring and maintenance equipment. The control building would be a painted block building or of prefabricated construction with external colours and finishes sensitive to the context to be confirmed prior to construction.

3.2.15 The BESS will be located within the same compound as the Project Substation. The overall size of the compound is anticipated to be approximately 65 x 65m.

Battery Energy Storage Systems (BESS)

3.2.16 The BESS is designed to provide energy shifting and grid balancing services to the electricity grid. It will do this primarily by allowing excess electricity generated from the solar PV generating station to be stored in batteries and dispatched when required.

3.2.17 The BESS comprise of a battery system, power conversion systems, transformers, switchgear, Supervisory control and data acquisition (SCADA) system, Heating, Ventilation and Air Conditioning (HVAC) systems, secondary fire-fighting system, electrical cables, and water storage tanks.

Ancillary Infrastructure Works

On Site Cabling

3.2.18 Low voltage on-site electrical cabling is required to connect the proposed infrastructure. Where possible, on-site cabling will be laid underground. The dimensions of the trenches will vary depending on the number of ducts they contain and are assumed to be up to approximately 3m in width and up to approximately 2m in depth. Cabling between solar PV modules and the inverters will typically be required to be AGL (along a row of racks), fixed to the mounting structure, and then underground (between racks and the inverter input).

3.2.19 Open-cut trenching methods would be used for much of the cable routing. However, subject to on-going engagement with utility providers and other stakeholders, there may be a requirement for specialist trenchless techniques (e.g. Horizontal Directional Drilling) for crossings of roads, environmental receptors, and other existing infrastructure.

Fencing and Security

3.2.20 Security fencing will enclose the operational areas of the Proposed Development. The fields encompassing the solar PV modules and supporting infrastructure will likely be fenced using ‘deer fence’ with wooden post supports which are expected to have a maximum height of 2.5m.

3.2.21 Pole mounted facing close circuit television (CCTV) systems which typically have a maximum height of 5m, are assumed to be deployed around the perimeter of the operational areas of the Proposed Development Area, including the on-site Substation compound.

3.2.22 Permanent palisade steel fencing (up to 3m high) will be installed around the perimeter of the Project Substation compound. The Project Substation compound would include lighting, in accordance with relevant standards, but will not be permanently lit.

Drainage

3.2.23 A detailed operational drainage design will be carried out pre-construction, with the objective of ensuring that drainage of the land to the present level is maintained.

3.2.24 The design of new drainage systems will be based on the Flood Consequence Assessment (FCA) to be undertaken in support of the planning application. Drainage and sewage systems are likely to be required at the Project Substation compound. Field drainage or ditches are assumed to be required in some areas of the solar PV generating station, depending on the topography and hydrology.

Access

3.2.25 The Proposed Development would be permanently accessed via St Mary Well Bay Road, which provide suitable entry points into the parcels which adjoin the public highway.

3.2.26 The Proposed Development would then utilise existing farm tracks and existing field entry points to avoid the loss of any existing vegetation / habitats. Early survey work has identified that all the fields designated for solar PV generating stations have suitable access points and are connected by an informal network of 'tracks' utilised by agricultural machinery. The Proposed Development would include upgraded access tracks and new access tracks. The access tracks will typically be constructed or upgraded using permeable materials such as gravel and will have a maximum running width of up to approximately 6m.

Landscaping, Habitat Management, Biodiversity Enhancement, and Amenity Improvements

3.2.27 The Proposed Development will include landscaping, habitat management, biodiversity enhancement, and amenity improvements, which will be explored as the design progresses. This will be sensitivity designed to retain and enhance ecological and recreational connectivity.

3.2.28 The Applicant will be working closely with local stakeholders to explore opportunities for improvement and enhancement across the Proposed Development Area, not just within the Proposed Development Area. Further detail on the mechanisms for implementing these measures are provided in **Sections 3.4.3 – 3.4.5**.

Grid Connection

3.2.29 The Proposed Development would need to be connected to the grid distribution system. The Applicant has undertaken discussions with National Grid Electricity Distribution (NGED) with regard to the grid connection for the Proposed Development.

3.2.30 It is understood that the Proposed Development would connect to either Penarth Primary Substation or Sully Grid Bulk Supply Point. This would form a separate application to the Proposed Development and thus, would be considered cumulatively as part of the EIA.

3.3 Construction Phase

Construction Programme

3.3.1 Subject to obtaining planning consent and following a final investment decision, construction is indicatively scheduled to commence in 2028 and last for approximately 6-9 months, followed by a commissioning period of approximately 3 months.

Construction Activities

3.3.2 The types of construction activities that may be required include the following:

- Site preparation.
- Import of construction materials, plant and equipment to the Proposed Development Area.
- Establishment of construction compounds and welfare facilities.
- Upgrading existing tracks and construction of new access tracks within the Proposed Development Area.
- Erection of module mounting structures and mounting of modules. Installation of electric cabling, inverters, transformer cabins, and battery storage units.
- Construction of Project Substation and installation of equipment.
- Appropriate storage and capping of soil and construction drainage.
- Cable pulling.
- Testing and commissioning.
- Site reinstatement (i.e. returning any land used during construction, for temporary purposes, back to its previous condition).

Construction Site Compounds and Access

3.3.3 Temporary compounds would be established before commencement of the main construction works for the storage of materials, plant and equipment. The compounds would also include staff welfare facilities, waste storage, and wheel washing areas.

3.3.4 The temporary compounds would include hardstanding areas, with apron and haul road areas comprising stone laid on a geotextile membrane. The construction compounds may require lighting to ensure safety and security, especially in the winter months.

3.3.5 The construction access to the Proposed Development Area will be via the B4267 Lavernock Road and St Mary Wells Bay Road. The construction access points into the Proposed Development Area will be assessed and determined as the design progresses. The number and location of any site access points will be discussed and agreed with the Local Highway Authority as part of the design process and will look to utilise existing accesses.

3.3.6 Temporary access tracks would be provided to link the temporary compounds to the access points. Where required, temporary access tracks would be constructed of stone laid on a geotextile membrane.

3.3.7 Further work will be undertaken to identify the land that is likely to be required for the temporary construction compounds (including laydown / storage areas), and access routes connecting to construction site from the local highway.

Construction Environmental Management

3.3.8 An Outline Construction Environmental Management Plan (OCEMP) will be submitted in support of the planning application and will set out the key measures to be employed during construction to control and minimise the impacts on the environment. The OCEMP will provide a framework which will be developed further by a Construction Contractor once they are commissioned for the scheme.

3.3.9 The subsequent details and implementation of this will be provided via the development of a detailed CEMP which will be secured by a planning condition.

3.3.10 The purpose of the CEMP is:

- To ensure nuisance levels because of construction and operation activities are kept to a minimum.
- To comply with relevant regulatory requirements and environmental commitments.
- To ensure procedures are put into place to minimise environmental effects during construction.

Construction Traffic Management

3.3.11 An outline Construction Traffic Management Plan (oCTMP) will be submitted in support of the planning application and will propose measures to control the delivery of materials and staff onto the Proposed Development Area during the construction phase.

3.3.12 The principles of the oCTMP will be available for comment as part of the statutory consultation process to ensure that the comments of residents and stakeholders are considered in its development.

Construction Reinstatement and Habitat Creation

3.3.13 A programme of construction reinstatement and habitat creation will commence during the construction phase. This will be detailed in the CEMP.

3.4 Operational Phase

Maintenance

3.4.1 Minor maintenance works are expected to occur throughout the operating life of the Proposed Development. It is assumed that routine inspections will be carried out and access will use the previously built construction access tracks.

3.4.2 Maintenance activities are likely to include:

- Regular visual inspection of all infrastructure.
- Regular scheduled inspections and testing of equipment.
- Replacement of consumable items (e.g. inverter filters).
- Cleaning of solar PV modules, if required.
- Repair or replacement of panels or other components, if damaged.
- Delivery of spare parts, replacement equipment items and consumables.
- Water management (e.g. clearing of drainage ditches).
- Vegetation management (e.g. cut back of grass, hedges, trees).

Landscape and Ecology Management

3.4.3 A programme of landscape and ecology management will be carried out. An Outline Landscape and Ecological Management Plan (OLEMP) will be submitted in support of the planning application, and this document will set out the principles for how the land will be managed throughout the operational phase, following the completion of construction.

3.4.4 The Applicant is exploring the opportunity to create grassland and animal grazing in the fields beneath the solar panels. This would have benefits for the land, as well as diversifying the farming practices across the Site.

3.4.5 A detailed Landscape and Ecological Management Plan (LEMP) will be produced following consent and prior to the start of construction, which will be secured by a planning condition.

BESS

3.4.6 An Outline Battery Safety Management Plan (OBSMP) will be submitted in support of the planning application. The OBSMP is required to set out the operational requirements and mitigations for any BESS related safety risks.

3.4.7 The requirement for an OBSMP is informed by the UK Government's National Planning Policy Guidance on renewable and low carbon energy (Paragraph: 034 Reference ID: 5-034-20230814) which includes recommendations for applicant's seeking planning permission for BESS development. The guidance also suggests that Applicant's consider the guidance produced by the National Fire Chiefs Council when preparing the application.

3.5 Decommissioning Phase

3.5.1 The Proposed Development has a design life of up to 40 years, and planning consent for this period will be sought. There are two options at the end of the operational life; repowering (via a new planning application) or decommissioning. As part of this application, it is assumed that the Proposed Development would be decommissioned.

3.5.2 At the end of the operational phase, any above ground infrastructure will be dismantled and removed in accordance with industry best practice at the time. The decommissioned materials will follow the waste hierarchy such that they would be reused where possible before recycling and disposal were considered.

3.5.3 For the purposes of this report, it is assumed that all concrete, hardstanding areas, and foundations for the infrastructure will be removed to a depth of up to 1m. It is assumed that all the below ground cables will be left in situ.

3.5.4 It is anticipated that after the operational period of 40 years, that the land within the Proposed Development Area will be returned to agricultural use and established habitats and planting, such as hedgerows and woodland would be retained.

4. Approach to EIA

4.1 Introduction

4.1.1 This chapter sets out the overall EIA approach that will be taken for the Proposed Development.

4.1.2 The ES will contain the information specified in Schedule 4 and regulation 17(3) of the EIA Regulations. The approach to the assessment has been informed by current best practice guidance.

4.1.3 A detailed overview of the guidance and methodology adopted for each environmental factor is provided within the respective environmental factor chapters of this report.

4.1.4 The environmental factors listed within paragraph 4, 5 and 8 of Schedule 4 of the EIA Regulations 2017 are listed below, and are considered in the Scoping Report:

- Air;
- Biodiversity;
- Climate;
- Cultural Heritage;
- Land and Soil;
- Landscape;
- Material Assets;
- Noise and Vibration;
- Population and Human Health; and
- Water.

4.1.5 It should be noted that although not listed as specific environmental 'factors' under Regulation 4(2) and Schedule 4 (Paragraph 4) of the EIA Regulations 2017, the following are also considered within this EIA Scoping Report:

- Agriculture and Land Use;
- Arboriculture;
- Glint and Glare;
- Heat and Radiation;
- Socioeconomics; and
- Traffic and transport.

4.2 Consultation

4.2.1 Consultation alongside the EIA process is critical to the development of a comprehensive and proportionate ES.

4.2.2 The views of statutory and non-statutory consultees are important to ensure that the EIA from the outset focuses on specific issues where significant environmental effects are likely, and where further investigation or assessment is required.

4.2.3 The consultation, as an ongoing process, enables embedded and additional mitigation measures to be incorporated into the Proposed Development to limit adverse environmental effects while optimising environmental benefits. Early and ongoing engagement with consultees will be important to influence the design process of the Proposed Development by seeking an appropriate level of feedback from consultees, to ensure that comments are considered in the evolving design.

4.2.4 As part of the EIA process, consultation will be undertaken with a range of statutory and non-statutory consultees. It is anticipated that consultees will include (but are not limited to):

- Vale of Glamorgan Council;
- Sully and Lavernock Community Council;
- Welsh Government (WG);
- Natural Resources Wales (NRW);
- Cadw;
- Heneb;
- South-East Wales Trunk Road Agency (SEWTRA);
- Public Health Wales (PHW);
- Cardiff Airport;
- Royal Society for the Protection of Birds (RSPB); and
- The Wildlife Trust of South and West Wales.

4.2.5 The purpose of this consultation will be to brief consultees on the Proposed Development, seek feedback on the approach to assessment, and where appropriate obtain baseline data. A summary of consultation will be included within the ES, and technical consultation will be summarised within the individual technical chapters.

4.2.6 The Applicant held an informal community consultation from 3 December 2025 to 23 January 2026. The Applicant shared information about early-stage plans and surveys and held community drop-in events. The Applicant intends to carry out further community consultation, with public exhibitions and circulars. The outcome of the consultation process will be compiled into a Pre-Application Consultation (PAC) Report to accompany the planning application, detailing the consultation undertaken and any changes made to the Proposed Development as a result.

4.3 General Assumptions and Limitations

4.3.1 The design and details of the Proposed Development are still under development. The EIA will clearly define the maximum design parameters, where some uncertainty exists in certain design elements, and establish the evolution of those design parameters and how they have been informed by the EIA process.

4.4 Defining the Study Area

4.4.1 The EIA Scoping Report is based upon the Proposed Development Area and Site Boundary presented on **Figure 5 (Appendix A)**. The informed Study Area for each environmental factor scoped into the EIA is defined within **Sections 6-9**.

4.5 Defining Phases of the Proposed Development

4.5.1 The EIA will consider the potential environmental impacts arising during the construction phase, operation and maintenance phase, and decommissioning phase of the Proposed Development. A summary of the indicative timing and duration of these phases are detailed in **Table 4-1**.

Table 4-1: Phases of the Proposed Development

Phase	Indicative Timescales
Construction	**Start date**: 2028 **Duration**: Approximately 6-9 months
Operation and Maintenance	**Start Date**: 2029 **Duration**: 40 years
Decommissioning	**Start Date**: 2069 **Duration**: Approximately 6-9 months

4.6 Establishing Baseline Conditions

Existing Baseline Conditions

4.6.1 Environmental effects because of the Proposed Development will be described in the ES in relation to the extent of changes to the existing baseline environment resulting from the construction and / or operation of the Proposed Development.

4.6.2 The baseline environment will comprise the existing environmental characteristics and conditions based upon desk-top studies and field surveys undertaken and information available at the time of the assessment.

4.6.3 The baseline conditions will vary dependent upon the timing of the survey or the date when data sources will have been produced / accessed. Data accessed from third parties (e.g., historic environment records, biodiversity data etc) may be older.

4.6.4 The provenance of all third-party data will be clearly outlined within all the technical components of the ES alongside any limitations identified.

4.6.5 No construction activities within the Site Boundary have occurred since the commencement of environmental surveys or are anticipated to occur from other sources prior to planning determination. Therefore, the baseline conditions will have remained constant during the process of data collection through desktop reviews and survey work.

Future Baseline Conditions

4.6.6 Where applicable, future baselines will be considered within the assessments scoped into the EIA to ensure any impacts of the Proposed Development are evaluated against future environmental changes (including likely impacts from climate change, land use change, etc.).

4.7 Approach to Mitigation

4.7.1 Schedule 4, Part 1, Paragraph 7 of the EIA Regulations states that an ES should include:

"A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset and should cover both the construction and operational phases"

4.7.2 The use of mitigation measures to avoid, reduce or compensate for significant adverse environmental effects is an intrinsic part of the EIA process. These measures can relate to site construction or the completed development (i.e., measures to be undertaken during the operation of the Proposed Development through appropriate site management or through the introduction of specific design elements).

Embedded Mitigation

4.7.3 In many cases, mitigation measures are embedded within the Proposed Development (either through design or operation) to reduce or avoid significant adverse effects arising. Within the IEMA (now ISEP) guidance[8], the following mitigation measures are defined as embedded mitigation:

- Primary mitigation: An inherent part of the design. It includes measures that are embedded into the design of a project to reduce or avoid impacts (i.e. avoidance of sensitive receptors, reduction in footprint, etc.).
- Tertiary mitigation: Measures that would be required regardless of any EIA assessment. This includes measures that would be implemented to meet legislative requirements, or standard practices.

4.7.4 Embedded environmental design measures that form part of the Proposed Development will be described in the description of the Proposed Development and will be considered within the assessment in identifying significant environmental effects.

Further Mitigation

4.7.5 Where significant environmental effects cannot be avoided, there is a requirement to consider the implementation of further mitigation measures to achieve the anticipated outcome. Within the IEMA (now ISEP) guidance[8], the following mitigation measure is defined as further mitigation:

- Secondary mitigation: Additional mitigation measures identified through the EIA process to avoid, reduce or offset significant adverse effects that remain after embedded mitigation has been considered.

4.7.6 Where further mitigation measures are identified and suggested for implementation based on the potential impact prior, an evaluation of the residual impacts and effects will be undertaken.

4.7.7 Any commitments to further mitigation measures will be reported within the relevant environmental factor chapters. Any requirements for further survey effort and monitoring to gauge the effectiveness of any proposed mitigation measures will also be captured within the relevant environmental factor chapter.

4.7.8 The delivery mechanisms for the mitigation measures outlined in the ES will be presented within a Mitigation Schedule that will form part of the ES.

[8] IEMA, (2024). Impact Assessment Guidelines: Implementing the Mitigation Hierarchy from Concept to Design. Available online at: https://associationofenvcows.org/downloads/send/5-industry-guidance/51-isep-formerly-iema-mitigation-in-eia-guidance-2024

4.8 Assessment of Likely Significant Effects

4.8.1 The ES will report on the likely significant environmental effects for the construction, operational, and decommissioning phases of the Proposed Development.

4.8.2 The following criteria will be considered when determining significance:

- Relevant legislation and planning policy.
- International, national, regional, and local standards / guidance.
- Probability of occurrence of likely effect.
- Geographical extent of likely effect.
- Magnitude and complexity of likely effect.
- Sensitivity / value / importance of the receptor / receiving environment.
- Duration (short up to one year, medium one to 10 years, or long-term over 10 years), frequency and reversibility of effect (temporary / permanent).
- Inter-relationship between effects (both cumulatively and in terms of potential effect interactions).

4.8.3 The method for assessing significance of effect varies between environmental factors but in principle will be based on the environmental sensitivity (or value / importance) of a receptor and the magnitude of change from baseline conditions. The magnitude of change will be assessed on a scale of large, medium, small, and negligible and sensitivity (or value / importance) will be assessed on a scale of high, medium, low, and negligible (refer to **Table 4-2**).

Table 4-2: Matrix for Determining Significance of Effect

		Sensitivity (Value / Importance)			
		High	**Medium**	**Low**	**Negligible**
Magnitude of Change	**Large**	Major	Moderate / Major	Minor / Moderate	Negligible
	Medium	Moderate / Major	Moderate	Minor	Negligible
	Small	Minor / Moderate	Minor	Negligible / Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

4.8.4 Where guidance documents for individual environmental factors requires that specific criteria or scales for determining significance are to be used, this will be outlined in the relevant environmental factor chapter presented later in this report.

4.8.5 It is important that levels of effect are clearly defined based on their significance. The EIA Regulations do not define significance, and it is, therefore, necessary to state how this will be defined for the Proposed Development. In certain circumstances it is possible for disciplines to use quantitative assessment methodology to predict effects / values that can be compared against published thresholds or indicative criteria. However, it is not always possible to use quantitative measurements / values and as such, some assessments rely on professional judgement, experience, or other evidence. This could be reference to the Proposed Development description, available information about potential changes that are expected to be caused by the Proposed Development, and the receptors that may be affected.

4.8.6 For some of the topics that are being assessed in the EIA there is published guidance about significance evaluation. Where such topic-specific guidance exists (even in draft) it will be used to inform the development of the significance evaluation methodologies used. For other topics, a major or moderate level of effect is generally of most importance to the decision-maker, and these effects are considered significant in terms of the EIA Regulations.

4.8.7 Where the level of effect is minor or less, these are generally not significant in terms of the EIA Regulations. Moreover, depending on the receptor being considered, it is possible that some potentially lesser effects could be judged as significant in terms of the EIA Regulations, and where this is judged to be the case, the rationale for this conclusion will be provided in the environmental factor chapters.

4.8.8 Summary effect tables that summarise the likely significant environmental effects associated with each of the environmental topics will be provided at the end of each environmental factor chapter. These tables will outline sensitive receptors, mitigation measures and residual effects. A distinction will be made between direct and indirect; short, medium, and long-term; permanent and temporary; and positive and negative effects.

4.9 Opportunities for Enhancing the Environment

4.9.1 Enhancement measures are those measures implemented as part of the Proposed Development that are ‘over and above’ mitigation.

4.9.2 Opportunities for environmental enhancement measures (i.e., off-site planting, Net Benefit for Biodiversity, etc.) will be considered throughout the design evolution of the Proposed Development and reported in the individual environmental factor chapters where relevant.

4.10 Cumulative Effects

4.10.1 In accordance with Schedule 4(5)(e) of the EIA Regulations, it is necessary to assess the Proposed Development in combination with other existing or approved projects. Cumulative effects result from multiple actions on receptors and resources over time and are generally additive or interactive (synergistic) in nature. Cumulative effects can also be considered as effects resulting from incremental changes caused by other past, present or reasonably foreseeable actions together with the Proposed Development.

4.10.2 An initial cumulative appraisal has been undertaken to identify any developments registered on the Council's planning portal, within 2km of the Proposed Development Area. It is recognised that there is no standard approach to cumulative effects assessment. Although the Proposed Development is not a Nationally Significant Infrastructure Project (NSIP), the cumulative effects assessment will comply with the Planning Inspectorate's advice published in 2024 on the process for undertaking cumulative effects assessments for NSIPs. The advice sets out a process for identifying 'other developments'. The definition of 'other developments' from the 2024 guidance note has been used to identify other developments that should be considered in this initial screening exercise. The criteria of potential other developments are shown in **Table 4-3.**

Table 4-3: Cumulative criteria

Hierarchy of other developments	Certainty of other developments	
Tier 1	Under construction*.	Decreasing level of detail likely to be available
	Permitted application(s), whether under the Town and Country Planning Act 1990, DNS or other regimes, but not yet implemented.	
	Submitted application(s), whether under the Town and Country Planning Act 1990, DNS or ICO regimes, either not yet determined, or refused applications which are subject to appeal (but not yet determined).	
Tier 2	Projects on the Welsh Government's register of DNS, and/or received by a relevant local planning authority, and where a scoping report has been submitted	
Tier 3	Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.	
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.	

4.10.3 Following an initial screening exercise, three developments of sufficient size and scale were identified within 2km of the Proposed Development:

- 2025/00493/RG3: Sully to Cosmeston ATR, Works for a shared pedestrian and cycle route (ATR), earthworks, landscaping and associated works from Sully to Cosmeston (Tier 1).
- 2020/01170/OUT: Land at Upper Cosmeston Farm, Lavernock Road, Penarth; Outline application for residential development, a primary school, community space and public open space with all matters reserved other than access. Approve subject to Legal Agreement (22/03/2024) within 500m (Tier 1).
- 2022/01113/RG3: Land at Lower Cosmeston Farm, Lavernock; Proposed new specialised school and associated access, landscape, and engineering works. Approved (14/06/2023) and currently under construction within 500m. (Tier 1).

4.10.4 The specialised school (Ysgol Llyn Derw) (2022/01113/RG3) is currently under construction and is scheduled to open in May 2026. Therefore, there are no anticipated cumulative effects.

4.10.5 At the time of writing this EIA Scoping, the construction programmes for the mixed-use residential development (2020/01170/OUT) and ATR (2025/00493/RG3) are not known. As a worst-case scenario, if all three proposals (the Proposed Development + 2025/00493/RG3 + 2020/01170/OUT) were progressed in parallel, then there is potential for cumulative effects. However, it is considered that with the utilisation of mitigation measures, construction management plans and construction best practice, the Proposed Development is not likely to result in significant in-combination effects.

4.10.6 During operation, it is envisaged that there is limited potential for in-combination effects. The Proposed Development will comprise a solar farm which has been sensitively designed and avoids the siting of infrastructure in the fields closest to the proposed mixed-use development (2020/01170/OUT). In addition, the Proposed Development has been designed to retain all existing PRoW meaning that connectivity will not be negatively impacted by development. There is potential for users of the ATR (2025/00493/RG3) to experience views into the Proposed Development Area, but mitigation planting will be reviewed as part of the development of a Landscape and Visual Impact Assessment and supporting OLEMP to minimise any potential effects on users.

4.10.7 Additional information regarding the cumulative effects specific to Landscape and Visual, Biodiversity, Noise and Vibration, and Traffic and Transport are presented in **Sections 6-9**.

4.10.8 The intra-project effects arising during the lifetime of the Proposed Development will be outlined in the Cumulative section of the Environmental Statement.

5. Environmental Factors Scoped Out

5.1 Introduction

5.1.1 As part of the EIA process and based on the information available to date, there are a number of environmental factors, as listed within the EIA Regulations 2017 (refer to Section 3.1), for which it is considered an assessment as part of the EIA is not justified, and therefore will not be considered in the ES. The environmental factors scoped out of the EIA are discussed within this Section.

5.1.2 The technical topics and factor-specific elements scoped in for further assessment as part of the ongoing EIA process are outlined in **Sections 6-9**.

5.2 Agriculture and Land Use

5.2.1 A review of the Welsh Government's ALC Map identifies that the Site predominantly comprises Grade 3b and Grade 4 agricultural land, which is not classified as BMV land (as shown on **Figure 3 (Appendix A)**). The Site is currently used for agricultural purposes, predominantly arable farming. No areas of Grades 1, 2 or 3a land are present within the Site.

5.2.2 During the construction phase, agricultural land would be temporarily affected by construction activities, including the movement of plant and vehicles. There is potential for temporary soil compaction and localised erosion; however, any effects on agricultural land and soils are anticipated to be minor, localised and reversible. Construction activities would be managed through an approved CEMP, incorporating appropriate soil management and handling measures in accordance with best practice. With these measures in place, it is unlikely that construction would result in any significant effects on agricultural land or soils.

5.2.3 The Proposed Development has the potential to impact public access during the construction phase where existing PRoWs pass through the Site. Construction activities may require a temporary closure and diversion of these footpaths to ensure safety for any users. If required, any temporary closures and diversions would be subject to a separate application process in consultation with the LPA and appropriate measures would be developed to ensure safe access is maintained. Public access through the existing PRoW would be maintained during the operational life of the Proposed Development and therefore, any effects would be temporary and limited to the construction phase. Given the temporary nature and the implementation of management measures, public access is not considered likely to give rise to significant adverse effects.

5.2.4 The Proposed Development has an anticipated operational life of approximately 40 years, which would result in a temporary loss of agricultural land. However, ground disturbance during operation would be limited, with agricultural use within the wider Site retained where practicable. The Proposed Development would allow for a change in land use from arable farming to grazing, so that agricultural use of the Site may continue during the operational life of the Proposed Development. The principal interaction with soil during the operational phase would be limited to the use of access tracks for routine maintenance, with any effects anticipated to be negligible.

5.2.5 Any effects during decommissioning would be comparable to those experienced during construction, would be temporary in nature, and would not result in significant residual effects.

5.2.6 Agriculture and land use have been **scoped out of the EIA** due to the following reasons:

- The Site does not comprise BMV agricultural land;
- Construction effects on soils are temporary and reversible, and would be managed through appropriate soil management and handling measures;
- Disruption to public access during construction would be short-term and temporary, with diversions and safe access maintained;
- Permanent disuse of agricultural land would be avoided due to limited ground disturbance and grazing of land during operation; and
- The Proposed Development is capable of being restored to arable farming use following decommissioning.

5.3 Air Quality

5.3.1 The nearest AQMA is located approximately 3.5km to the north of the Site Boundary.

5.3.2 During construction, emissions to air would be limited to those associated with construction traffic, construction plant, and the movement of the workforce to and from the Site. There is potential for localised and short-term dust generation, particularly during the formation or modification of access tracks and earthworks. However, these effects would be temporary and confined to the construction period.

5.3.3 Any potential impacts on air quality during construction are anticipated to be negligible to minor and would be appropriately managed through an approved CEMP and CTMP. These documents would include best practice measures to minimise dust generation and vehicle emissions. With these controls in place, it is unlikely that construction activities would result in any significant effects on air quality.

5.3.4 During operation, the Proposed Development would not give rise to any meaningful emissions to air. Unlike other electricity generating technologies, solar PV infrastructure does not produce operational air emissions, with activities limited to occasional maintenance visits by technicians. The potential emissions from BESS fires would be managed through the BSMP. As such, no significant operational effects on air quality are anticipated.

5.3.5 At the end of the operational phase, the Proposed Development would either be subject to a future planning application seeking an extension to the operational life of the infrastructure or would be decommissioned and the land restored to its baseline agricultural condition. Any air quality impacts during decommissioning would be temporary and comparable to, or no worse than, those during construction, and would not result in significant effects.

5.3.6 Air quality has been **scoped out of the EIA** due to the following reasons:

- The Site is located a significant distance from the nearest AQMA;
- Potential construction effects are temporary and controllable through standard mitigation;
- The Proposed Development would not generate operational air emissions; and
- Potential decommissioning effects would be temporary, minor and short-term.

5.4 Climate

Greenhouse Gases

5.4.1 The Site is currently used for agricultural purposes, predominantly arable farming. Existing activities on Site are not associated with notable greenhouse gas (GHG) emissions beyond those typical of rural agricultural land use.

5.4.2 During construction, there is potential for a temporary increase in GHG emissions, primarily associated with the use of construction plant, construction traffic, and the movement of the workforce to and from the Site. However, these emissions would be short-term and localised. Construction activities would be managed through an approved CEMP and CTMP, which would include measures to minimise vehicle movements, manage plant use efficiently, and reduce unnecessary emissions. With these controls in place, it is unlikely that the construction phase would result in any significant adverse effects on climate.

5.4.3 During operation, the Proposed Development would result in the generation of renewable electricity, thereby contributing to the avoidance of greenhouse gas emissions through the displacement of fossil fuel-derived electricity from the National Grid. The Proposed Development has an anticipated design life of up to 40 years, during which it would make a sustained contribution to reducing national GHG emissions. The operational phase is therefore anticipated to result in a beneficial and significant effect on climate. A Carbon Balance Report will be prepared and submitted as part of the planning application for the Proposed Development.

5.4.4 At the end of the operational phase, the Proposed Development would either be subject to a future planning application seeking an extension to the operational life of the infrastructure or would be decommissioned and the land restored to its baseline agricultural condition. Any emissions associated with decommissioning would be temporary and comparable to, or no worse than, those generated during construction, and would not result in significant effects.

5.4.5 Climate has been **scoped out of the EIA** on the basis that potential construction and decommissioning effects are temporary and minor, and the operational phase would deliver a net beneficial contribution through the reduction of greenhouse gas emissions over the lifetime of the Proposed Development.

Climate Resilience

5.4.6 Climate resilience refers to the vulnerability of the Proposed Development to the potential effects of future climate change.

5.4.7 The Proposed Development will be designed in accordance with relevant legislation, planning policy and industry standards, considering future climate change where appropriate. Climate resilience considerations, including future changes in rainfall intensity, flood risk, temperature and extreme weather events, will be incorporated into the design process, including:

- Location: the Proposed Development has been sited within an area of very low probability of flooding from rivers or the sea.
- The FCA and drainage strategy – incorporating climate change allowances in the assessment of flood risk and drainage design.
- Landscape and ecology management – consideration of climate changes in the development of landscape and ecology plans (e.g. selecting native species, tolerant species, etc.).
- Design – ensuring panels and mounting structures are designed in accordance with relevant structural standards.

- Fire risk – measures to manage fire risk, including installation of equipment by suitably qualified professionals, regular inspection and maintenance, and adherence to applicable safety standards.

5.4.8 In addition, future climate change will be considered within the future baseline for individual topics within the ES. The potential effects of climate change on receptors, for those topics scoped in, will be considered within the corresponding technical chapter. However, there will not be a standalone chapter for climate resilience.

5.4.9 Given the nature, scale and location of the Proposed Development, and the incorporation of design measures, it is not anticipated that climate change will result in significant effects on the Proposed Development. Therefore, climate resilience has been **scoped out of the EIA**.

5.5 Glint and Glare

Introduction

5.5.1 Glare or dazzle in the built environment can occur when sunlight is reflected from the façade surfaces (such as solar panels) onto buildings, pedestrians, vehicles, trains, and aircraft. The problem can occur when the proposed facades have significant areas of reflective material and when the bright area caused by the incident sunlight is within the observer's field of view.

5.5.2 Glint is typically defined as a momentary flash of bright light, often caused by a reflection off a moving source. A typical example of glint is a momentary solar reflection from a moving car. Glare is defined as a continuous source of bright light. Glare is generally associated with stationary objects, which, due to the relative slow movement of the sun, reflect sunlight for a longer duration.

5.5.3 Glint and Glare impacts have the potential to affect sensitive receptors, such as roads, railways and aerodromes, during the operational phase. The Study Area for the glint and glare assessment will be based on the Proposed Development Area, as shown in **Figure 5 (Appendix A)**. In accordance with the Civil Aviation Authority's guidance[9], the extent of the study for aviation should cover a radius of 10km from the centre of the Site. This is to ensure that potential glare impacts on aircraft are adequately assessed. Additionally, the Study Area will include all roads and dwellings within 1km from the Proposed Development Area, and any railway tracks within 500m of the Proposed Development Area, in accordance with Pager Power guidance note for assessing the impacts of glint and glare[10].

Receptors

5.5.4 Relevant receptors within the Study Area are defined below:

Roads

- St Mary's Bay Road and Fort Road are located immediately adjacent to the Proposed Development Area. St May's Bay Road provides access into the Site.
- Lavernock Road (B4267) is located immediately north of the Proposed Development Area
- Residential streets (Clevedon Avenue, Elm Close, Winsford Road, Highbridge Close, Swanbridge Road) that adjoin South Road (B4267) in Sully.
- Residential Streets (Cosmeston Drive, Falcon Grove, Osprey Close, Raven Way, Mallard Way, Lapwing Close, Fulmar Close, Althrop Drive and Shearwater Close) in South Cosmeston.

Dwellings

- Individual dwellings are located immediately adjacent to the Proposed Development Area. One property adjoins Fort Road, and a further property is located beneath the woodland area beneath Hopkins Mount in the western extents of the Site.
- The nearest residential areas are located approximately 500m north-east in Penarth and 550m west in Sully (nearest residential streets are named above in the Road receptor section).

[9] Civil Aviation Authority, (2023). Renewable Energy Developments: Solar Photovoltaic developments CAST Aerodrome Safeguarding Guidance Note. Available online at: https://www.caa.co.uk/media/hlsmmmoi/cast-renewable-energy-developments-solar-july-2023.pdf

[10] Scrivener, D. et al. (2022). Solar Photovoltaic and Building Development – Glint and Glare Guidance, Fourth Edition. Pager Power Urban and Renewable. Available at: https://www.pagerpower.com/services/glint-and-glare/

Aerodrome

- Cardiff Airport is located 9.25km west of the Proposed Development Area.

Assessment Summary

5.5.5 There are no significant effects that will arise from the construction or decommissioning phases due to the nature of the Proposed Development. Effects will not occur until the panels are fully installed and following the end of the operational phase, effects will diminish to none as panels are removed from the Site.

5.5.6 During operation, disability glare, caused by excessive brightness in the field of vision, can significantly impair visual performance and increase the risk of accidents. This impact is particularly critical for transportation modes such as aviation, road, and rail, where rapid decision-making and visual acuity are paramount for safety.

5.5.7 Given the scale of the Proposed Development, and its proximity to relevant road, aerodrome and dwelling receptors, it is proposed that the potential solar glint and glare impacts on the adjacent surroundings are considered in a standalone **Glint & Glare Technical Report** that will be submitted in support of the planning application.

5.5.8 The methodology to be adopted in the report is set out below:

- Site Assessment: Review of the proposed masterplan scheme, including terrain, topography, and surrounding land use;
- Receptor Identification: Identification of all relevant receptors within the appropriate study areas;
- Solar Simulation: Conduct a solar simulation using industry-standard methods to determine the potential for solar reflections from the PVs for impacting on sensitive receptors;
- Glare Intensity and Duration Assessment: Quantify the intensity and duration of potential glare incidents at identified receptors;
- Compliance Assessment: Evaluate the potential glare impacts against relevant UK and international industry standards and guidelines;
- Mitigation Strategy Development: If necessary, recommend mitigation measures to reduce or eliminate glare; and
- Prepare a planning-ready report summarising the assessment findings, conclusions and recommendations.

5.5.9 On this basis, it is proposed that Glint & Glare is **scoped out of the EIA** and would be considered as part of the standalone Glint & Glare Technical Report.

5.6 Heat and Radiation

5.6.1 The requirement to consider heat and radiation in UK EIA practice was introduced via the EIA Regulations 2017. Schedule 4(5)(c) of the EIA Regulations 2017 requires that an ES includes:

'A description of the likely significant effects of the development on the environment resulting from, inter alia:

(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste.'

5.6.2 Due to the scale and nature of the Proposed Development, it is not anticipated that there will be any significant sources of heat or radiation during construction, operation, or decommissioning. There is the possibility of unexpected battery fires, which will be managed via the Battery Safety Management Plan (BSMP). The consideration of heat and radiation emissions has therefore been **scoped out of the EIA**.

5.7 Hydrology, Hydrogeology, and Geology

Hydrology - Flood Risk and Drainage

5.7.1 A review of the NRW Flood Risk Assessment (FRA) Wales Map identifies that there are localised areas of 'high risk of surface water flooding' (flood zones 2 and 3) within the Proposed Development Area. However, these areas are restricted to the edges of field boundaries and associated drainage channels. Please refer to **Figure 2 (Appendix A)**.

5.7.2 The Proposed Development Area is located within an area identified as having a 'very low probability of flooding from rivers or the sea'. The nearest main river is Sully Brook, located approximately 130m north-west of the Proposed Development Area, with Cosmeston Lakes located approximately 230m away. Please refer to **Figure 2 (Appendix A)**.

5.7.3 Groundwater movement across the Proposed Development Area broadly follows the natural topography, flowing from north to south.

5.7.4 During construction, activities including localised topsoil stripping, material stockpiling, establishment of the construction compound, earthworks (including the substation and BESS), and the upgrading of informal access tracks have the potential to result in temporary increases in surface water run-off, soil erosion and sediment mobilisation. There is also potential for localised accidental contamination arising from construction plant, refuelling activities and the movement of machinery. While the Proposed Development Area is generally absent of watercourses, minor drainage channels, isolated waterbodies and ditches are present along the perimeter of field boundaries.

5.7.5 Construction impacts would be managed through an approved CEMP, incorporating best practice measures and guidance set out in the Guidance for Pollution Prevention (GPP) documents[11]. The CEMP would include appropriate pollution prevention, soil management and emergency spill response procedures, together with records of consultation with NRW, and would be supported by a Surface Water Drainage Plan. Therefore, with these measures in place, there is not anticipated to be any significant effects on flood risk and drainage during the construction phase.

5.7.6 As detailed in **paragraph 3.2.23**, the detailed operational drainage design will be based on the FCA. Drainage and sewage systems are likely to be required at the Project Substation compound. Field drainage or ditches are assumed to be required in some areas of the solar PV generating station, depending on the topography and hydrology. The Proposed Development would comprise ground mounted solar panels that are designed to allow rainwater to drain naturally to the underlying ground and operational drainage design. Where access tracks are required, these would comprise permeable compressed hardcore, ensuring no increase in surface water run-off. The Proposed Development is therefore not anticipated to result in significant operational effects on flood risk and drainage.

5.7.7 At the end of the operational phase, the Proposed Development would either be subject to a future planning application to extend its operational life or would be decommissioned, and the land restored to agricultural land. Any effects during decommissioning would be temporary in nature and comparable to those during construction and would not give rise to significant residual effects.

5.7.8 The planning application will be supported by a standalone **Flood Consequence Assessment** and a standalone **Drainage Statement**, including a Sustainable Drainage System (SuDS) design, prepared in accordance with Technical Advice Note (TAN) 15. The SuDS proposals will be subject to approval by the SuDS Approving Body (SAB), with pre-application consultation undertaken to agree the drainage strategy, and all relevant documentation submitted alongside the planning application.

[11] Northern Ireland Environment Agency; Agriculture, Environment and Rural Affairs; Scottish Environment Protection Agency; and Natural Resources Wales. Guidance for Pollution Prevention (GPP) documents. Available online at: https://www.netregs.org.uk/tools/guidance-for-pollution-prevention-gpp-documents/

Hydrogeology and Geology

5.7.9 The Proposed Development Area is mostly located within a mineral safeguarding area for Limestone (Category 1 and / or 2), and the Lavernock Quarry Dormant Mineral Site (referred to in the LDP[12] as a dormant site where the Council seek to prevent further mineral extraction). The safeguarding areas are based upon the British Geological Survey (BGS) Aggregate Safeguarding Map for South-East Wales[13].

5.7.10 A PRA was completed for the Site in July 2025 (see **Appendix E**). The PRA confirmed that the underlying geology comprises Tournaisian to Hettangian mudstone, limestone and dolomitised limestone formations, underlain by Principal and Secondary A/B aquifers across the Site extents, with western areas capable of supporting water storage and river baseflow. The PRA identified potential contaminative sources associated with historic land uses of the old quarry within the Proposed Development Area; however, the Proposed Development Area avoids areas of identified made ground (ground that has been artificially created or significantly modified by human activity) or known contamination, and the risk posed to controlled waters and human health is low.

5.7.11 The planning application will also be supported by a **Mineral Resource Assessment** which will assess whether the Proposed Development would impact the viability of the resources at the Proposed Development Area. Furthermore, the Proposed Development would be temporary and, following decommissioning, the Proposed Development Area would be restored. As such, the underlying mineral resources would not be sterilised. Therefore, any potential construction or decommissioning phase effects are anticipated to be negligible and not significant.

Summary

5.7.12 In relation to flood risk and drainage, there are no significant effects anticipated due to the following:

- The Proposed Development is in an area of low fluvial and tidal flood risk;
- Potential impacts on flood risk and contamination of surface and ground water during construction are temporary, localised and appropriately mitigated through best practice measures;
- There would be no significant effect on surface water run-off during operation as the design will include raised panels, SuDS and permeable access tracks; and
- The Proposed Development is temporary and reversible in nature.

[12] Vale of Glamorgan Council (2017) Local Development Plan. Available online at: https://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Policy/LDP/LDP-Adoption/Adopted-LDP-Written-Statement-June-2017-final-interactive-web-version.pdf

[13] British Geological Society (BGS), (2012). Aggregates safeguarding map of South-East Wales. Available online at: https://nora.nerc.ac.uk/id/eprint/20134/

5.7.13 In relation to hydrogeology and geology (Including mineral safeguarding), there are no significant effects anticipated due to the following:

- The Proposed Development avoids areas of identified contamination and made ground; and
- The Proposed Development is temporary and reversible in nature.

5.7.14 Therefore, hydrology, hydrogeology and geology have been **scoped out of the EIA** as no significant effects are anticipated.

5.8 Major Accidents and Disasters

5.8.1 The nature of the Proposed Development is not considered to give rise to Major Accidents or Disasters, following the implementation of relevant design considerations and mitigation measures. The following section considers the risks of Major Accidents and Disasters relating to the following:

- H&S risks during construction phase;
- Impacts on the quality of surface water and groundwater, including accidental pollution;
- Increased flood risk; and
- Risk of equipment failure and fire.

5.8.2 During construction, established regulations and industry best practice would be applied to manage on-site works and reduce the risk of major accidents or disasters. Construction activities would be undertaken in accordance with an approved CEMP, including appropriate emergency response procedures, and compliance with all relevant Health and Safety Executive requirements and Construction (Design and Management) Regulations 2015[14].

5.8.3 Furthermore, the construction phase would incorporate pollution prevention and emergency response measures to ensure that the potential for contamination of groundwater and surface water is reduced as far as reasonably practicable. Such measures would be implemented through the CEMP. The drainage design of the Proposed Development would also include appropriate mitigation to control runoff and water quality. With these controls in place, no significant effects arising from major accidents or disasters are anticipated during construction.

[14] The Construction (Design and Management) Regulations 2015. Available online at: https://www.hse.gov.uk/construction/cdm/2015/index.htm

5.8.4 The Proposed Development Area comprises an area of very low flood risk. A FCA will be undertaken to ensure that the Proposed Development does not increase flood risk or adversely affect local hydrology. However, due the nature and design of the Proposed Development, it is not anticipated to result in any increase in flood risk within the Proposed Development Area or in the surrounding area.

5.8.5 The Proposed Development comprises electrical infrastructure, including the Project Substation and associated battery storage, which carries a very low risk of fire. This risk would be managed through the installation of equipment by suitably qualified professionals, regular inspection and maintenance, and adherence to applicable safety standards. The planning application will be supported by an oBSMP and a Fire Strategy Plan, informed by guidance produced by the National Fire Chiefs Council. With these measures in place, the operational phase is not anticipated to give rise to significant effects relating to major accidents or disasters.

5.8.6 At the end of the operational phase, the Proposed Development would either be subject to a future planning application seeking an extension to the life of the existing infrastructure or would be decommissioned and the land restored to its baseline agricultural condition. Any risks during decommissioning would be temporary and comparable to, or no worse than, those during construction, and would not result in significant effects.

5.8.7 Major accidents and disasters have been **scoped out of the EIA** on the basis that the Proposed Development is located in an area of low environmental risk, would be constructed and operated in accordance with established health, safety and emergency procedures, while being supported by appropriate assessments and management plans, and is temporary and reversible in nature.

5.9 Material Assets and Waste

5.9.1 The Site is currently used for agricultural purposes, predominantly arable farming, which has the potential to generate waste typical of agricultural land use, including agricultural equipment, fertilisers and raw materials.

5.9.2 The term ‘material assets’ has a broad scope, which may include assets of human or natural origin, valued for socio-economic or heritage reasons. The term ‘waste’ includes any substance or object which the holder discards, intends to discard, or is required to discard, as defined in the Waste (England and Wales) Regulations 2011[15]. These are often considered as part of topic assessments, including historic environment, socioeconomics and agriculture.

[15] GOV.UK (2011) Waste (England and Wales) Regulations. Available online at: The Waste (England and Wales) Regulations 2011

5.9.3 There are no significant material assets or waste relating to agriculture or socioeconomics within the Proposed Development Area that would be affected by the Proposed Development. However, heritage assets will be considered as part of the historic environment ES chapter.

5.9.4 During construction, the use and management of materials and resources would be controlled through an approved CEMP. The CEMP would incorporate a Site Waste Management Plan (SWMP), which would monitor waste arising, identify measures to minimise waste generation, and set out procedures for the appropriate storage, segregation, reuse, recycling and disposal of waste materials. Construction waste materials would predominantly include inert and non-hazardous wastes, including (but not limited to) aggregates, concrete, packaging materials, waste electrical and electronic equipment, green waste, and waste from construction compounds (i.e. paper, food waste, sanitary waste, etc.). Any hazardous waste, such as plant machinery oils, would be managed in accordance with the Hazardous Waste (England and Wales) Regulations 2005[16].

5.9.5 The CEMP would also ensure that construction materials would be locally sourced where practicable and from recycled or secondary sources where feasible, with all materials stored within designated areas to minimise the risk of pollution to air, ground or water. All relevant environmental legislation would be complied with, and any waste requiring off-site disposal would be handled by suitably licensed contractors. With these measures in place, the construction phase is not anticipated to give rise to significant effects.

5.9.6 During operation, the use of materials and generation of waste would be minimal, and largely limited to routine maintenance activities, including the replacement of redundant or damaged components where required. Given the limited scale and infrequency of such activities, no significant effects on material assets or waste are anticipated during the operational phase of the Proposed Development.

[16] The Hazardous Waste (England and Wales) Regulations 2005. Available at: https://www.legislation.gov.uk/uksi/2005/894/contents [Accessed: June 2026].

5.9.7 At the end of the operational phase, the Proposed Development would either be subject to a future planning application seeking an extension to the life of the existing infrastructure or would be decommissioned and the land restored to its baseline agricultural condition. Any waste generated during decommissioning would be managed in accordance with applicable legislation and best practice. This is likely to comprise predominantly inert and non-hazardous materials such as concrete, steel, cabling and infrastructure components, along with smaller volumes of packaging and ancillary materials. A substantial proportion of these materials, particularly metals and certain aggregates, would be suitable for reuse or recycling through established waste management routes.

5.9.8 There would also be some hazardous wastes, including oils and fuels (i.e. plant machinery oils) and batteries. These would be managed and disposed of in accordance with the Hazardous Waste (England and Wales) Regulations 2005. Impacts during decommissioning would be temporary and comparable to, or no worse than, those during construction, and would not result in significant effects.

5.9.9 Material assets and waste have been **scoped out of the EIA** on the basis that potential impacts would be temporary and effectively managed through standard controls, waste generation would be minimised and appropriately managed through the CEMP and SWMP, no sensitive material assets would be affected, and the Proposed Development is temporary and reversible in nature.

5.10 Population and Human Health

5.10.1 The Institute of Sustainability Environmental Professional's (ISEP), formally the Institute of Environmental Management (IEMA), guidance[17] on scoping of human health has been considered when determining the likely significant effects on human health. This has ensured that the approach to scoping is proportionate and all relevant determinants of health have been appropriately considered.

5.10.2 It is anticipated that the Proposed Development would not give rise to significant effects human health that would require a standalone human health chapter. Accordingly, Human Health is proposed to be scoped out as a standalone chapter and will instead be addressed within the individual technical chapters, where relevant.

[17] Pyper, R., Lamming, M. and Beard, C., (2022). Guide to effective scoping of human health in Environmental Impact Assessment. Available at: https://www.researchgate.net/publication/376488593_IEMA_Guide_Effective_Scoping_of_Human_Health_in_Environmental_Impact_Assessment

5.10.3 The EIA wider determinants of health are considered below, in line with ISEP guidance:

- **Health and safety:** the health and safety (H&S) risks associated with the construction phase of the Proposed Development will be considered and addressed as part of the Outline CEMP. This will include standard measures to be implemented to promote H&S across the site, as well as secure site fencing and temporary closure and diversions of public footpaths where necessary. Similar standard measures would be implemented for H&S during decommissioning. As noted in paragraph 5.8.5, the installation of equipment by suitably qualified professionals, regular inspection and maintenance, and adherence to applicable safety standards and management plans (i.e. oBSMP and a Fire Strategy Plan) will ensure that fire risk and safety is maintained during the operational phase.
- **Social:** the relevant wider determinants of health in relation to the social environment include:
    - Housing: the Proposed Development is unlikely to have adverse impacts on housing availability in the local area.
    - Open space, leisure and play: access to recreational routes (i.e. PRoWs) would be maintained during the construction, operation and decommissioning phase through the consideration of temporary closure and diversion of footpaths. This will be considered within the Outline CEMP, with measures proposed to ensure safe access is maintained for footpaths.
    - Transport and access: traffic management measures would be implemented through the CTMP, which would reduce potential impacts on accessibility and safety for local receptors during construction. Furthermore, the operational effect on the local road network would be minimal as access would only be required for routine maintenance.
- **Economic:** as discussed in **paragraph 5.11.2** and **5.11.3**, effects associated with employment and skills development opportunities are not anticipated to be significant across all phases and thus, have been scoped out of the EIA.
- **Bio-physical environment**:
    - Climate change: no significant effects are anticipated (see **section 5.4**).
    - Air quality: no significant effects are anticipated (see **section 5.3**).
    - Water quality and availability: as detailed in **section 5.7**, the CEMP would ensure that appropriate pollution prevention are implemented to minimise impacts on water quality during construction. During operation, the Proposed Development would not involve any activities with the potential to significantly affect water quality and availability; therefore, no significant operational effects are anticipated.

- Land quality: consideration of potential effects on visual amenity and landscape character, including views from recreational users (PRoWs) and residential properties will be considered as part of the landscape and visual chapter (see **section 6**).
- Land Contamination: although the Site contains areas of potential contamination (as detailed within the PRA, **Appendix E**), these are limited to the old quarry within the Proposed Development Area. The PRA concludes that the risks posed to human health receptors from the potential contamination sources is low, based upon the Proposed Development and layout situated outside of the areas of identified Made Ground. Therefore, risks to human health from land contamination is not anticipated.
- Noise and vibration: noise and vibration impacts on Noise Sensitive Receptors will be considered within the noise and vibration ES chapter (further details in **section 8**).
- Radiation: no significant effects are anticipated (see **section 5.6**).

- **Built environment**: It is not anticipated that the construction, operation or decommissioning of the Proposed Development would have significant impacts upon the built environment, including health and social care services and wider infrastructure.

5.10.4 Mitigation measures to be embedded as part of the Proposed Development will include traffic management measures to be implemented through the CTMP, and construction management measures to be implemented through the CEMP, including dust control measures, noise mitigation measures, and pollution prevention measures. These measures would help manage associated health impacts.

5.10.5 Overall, in line with the principles of preparing a proportionate EIA, a standalone human health chapter is proposed to be **scoped out of the EIA**.

5.11 Socioeconomics

5.11.1 Socioeconomics can be defined as the relationship between the economic activity that comes from a proposed development and the potential impact it may have on the local community. Solar farm developments, such as the Proposed Development, have the potential to have a variety of direct and indirect economic effects, including:

- Provision of employment throughout the construction and decommissioning phases.
- Use of local services, such as hospitality and retail services by workers during the construction and decommissioning phases.

5.11.2 The construction and decommissioning of the Proposed Development would give rise to temporary employment generation, skills development opportunities and limited beneficial effects on the local economy through expenditure on goods and service (i.e. accommodation, food, transport, etc.). However, these effects would be short term, limited to the duration of the construction and decommissioning periods (6-9 months). As a result, any increase in demand on local services and infrastructure would be relatively minor and of short-term duration. Accordingly, these socioeconomic effects are not anticipated to be significant.

5.11.3 During its construction and decommissioning, the Proposed Development would not give rise to significant effects on tourism. The construction/decommissioning phases would be temporary and localised and would be managed through the CEMP to ensure safe access is maintained for footpaths and disturbance (i.e. noise, dust, etc.) is minimised. Construction traffic would be limited in duration (6 months) and is not expected to disrupt accessibility of surrounding areas.

5.11.4 During its operation, the Proposed Development would be unmanned and given its scale, would only require minor maintenance works throughout its operating life. Therefore, the Proposed Development would not be a source of long-term employment and thus, would not have a significant effect on operational employment.

5.11.5 Whilst some employment would be created, it is unlikely to be significant given the nature and scale of the Proposed Development. On that basis socio-economic effects will be **scoped out from the EIA** and will not be considered further.

5.12 Traffic and Transport

5.12.1 A Transport Scoping meeting was held between WSP and the Council's Highway Team on the 16 April 2026 to discuss the scope of assessment from a transport perspective. The meeting agreed the location for traffic surveys to be undertaken and provided agreement on the principal study area, which would be the local highway network (see **Appendix F**). A Transport Scoping Document was issued to Vale Glamorgan Council's Highways, setting out the scope of the Transport Statement and outline CTMP, which will support the planning application for the Proposed Development (see **Appendix F**).

Baseline

5.12.2 The Site is currently accessed via Fort Road and St Mary's Well Bay Road, both roads adjoin the wider highway network via the B4267 Lavernock Road.

Construction Phase

5.12.3 Additional traffic associated with the Proposed Development would be generated during the construction phase. As described in **Section 3**, the construction phase is envisaged to last approximately 6 to 9 months, followed by a commissioning period of approximately 3 months.

5.12.4 The agreed vehicle route with the local highway authority from the Strategic Road Network to the Site would be the M4 (junction 33), the A4232, the A4050 Port Road, A4231 Barry Docks Link Road, B4267 Sully Moors Road, B4267 South Road through Sully, B4267 Lavernock Road and St Mary's Well Bay Road.

5.12.5 The ISEP, formally the IEMA, Guidance[18] published in 2023 presents two broad rules of thumb as criteria to assist in determining environmental assessments:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more.

5.12.6 Based on the current design and anticipated traffic movements, it is not envisaged that traffic associated with the construction phase would exceed a 30% change in baseline flows within the study area. Further to this, no links identified within the study area are of high sensitivity.

5.12.7 An outline CTMP will be submitted in support of the planning application and will propose measures to control the delivery of materials and staff onto the Site during the construction phase. The CTMP will also detail the volume and type of construction vehicles and whether any abnormal and indivisible loads are likely. Following the appointment of the contractor, a final CTMP will be submitted to the planning authority prior to the commencement of works to finalise and agree traffic control measures and restrictions.

Operational Phase

5.12.8 Once the Proposed Development is operational the effect on the local road network will be minimal. Access will be required from time to time for routine maintenance, and less frequently for major maintenance and upgrades. Therefore, it is not anticipated that the changes in traffic on the existing network will change by more than 30% for all vehicle movements, these being defining thresholds for environmental effects on the local transport network.

[18] Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement, IEMA, 2023

Transport Statement

5.12.9 A **Transport Statement** will be submitted to support the planning application which will include a detailed analysis of the accessibility of the Site by sustainable modes, a review of personal injury collision data, an assessment of additional vehicles on the highway network during the various phases and an assessment to determine any potential impacts on PRoW and the ATR. This will include details of any proposed temporary / permanent closures and associated diversions, should these be required.

Summary

5.12.10 On this basis, it is proposed that Traffic and Transport is **scoped out of the EIA** due to the following reasons:

- Construction traffic flows are not expected to exceed a 30% change in baseline flows;
- The links in the study area not being deemed to have a high sensitivity;
- An Outline CTMP will be developed and submitted with the planning application, which will include measures to control vehicle movements;
- During operation, traffic levels would be very low, limited to occasional maintenance visits, resulting in minimal changes to baseline traffic conditions; and
- A Transport Statement will support the application, including assessment of accessibility, safety, traffic generation, and impacts on PRoW and the local highway network.

5.13 Arboriculture

5.13.1 A tree survey has been completed, confirming the presence of several Tree Preservation Orders (TPOs) within and adjacent to the Site. An Arboricultural Impact Assessment (AIA) will be prepared and submitted as part of the planning application for the Proposed Development.

5.13.2 The Proposed Development has been designed to avoid woodland, trees and hedgerows. This includes the application of a 10 m buffer to all field boundaries to avoid all habitats within the boundary of the Site. Records of all areas of woodland were drawn from aerial base mapping and publicly accessible datasets.

5.13.3 Furthermore, potential effects on trees during the construction phase would be appropriately managed through the implementation of the CEMP, which would include measures to retain vegetation and protect trees (i.e. root protection zones). Mitigation measures would be informed by the AIA.

5.13.4 On this basis, no significant effects are anticipated, and arboriculture is proposed to be **scoped out of the EIA.**

6. Landscape and Visual

6.1 Introduction

6.1.1 This section outlines the rationale for scoping landscape and visual impacts into the EIA for the Proposed Development. It describes the methodology to be used within the Landscape and Visual Impact Assessment (LVIA) and provides an overview of the baseline conditions and the datasets to be used to inform the LVIA.

6.1.2 The LVIA will consider the potential effects of the Proposed Development on the physical landscape, on landscape character, and on views and visual amenity within a defined study area. This section also outlines design considerations that may be needed to provide mitigation and enhancement of the Proposed Development.

6.1.3 The scoping for the LVIA has been informed by an initial Landscape and Visual Appraisal (LVA) prepared by WSP in March 2025 that included a site walkover as well as subsequent visits to the Site and the Study Area in September 2025 and March 2026.

6.2 Consultation

Pre-Application Advice

6.2.1 A response to a request for statutory pre-application advice was received from the Council dated 11th March 2026 (Ref: P/DC/2025/00095/EPA). Whilst no comments were received from the Council's Landscape Architect, the Planning Officer's Response highlighted that the Proposed Development Area is located in the Countryside and within the Green Wedge designation (Policy MG18) between Penarth to Sully. The response explains that the purposes of the Green Wedge designation is to "*prevent the coalescence of the settlements and to retain the openness of land which has a coastal character in this location*."

6.2.2 Therefore, the response considers that the "*adverse impacts of such a large scale solar farm on the landscape area are undeniable and should be more fully explored through a detailed Landscape and Visual Impact Assessment (LVIA).*" Although it goes on to explain that "*the responding Officer has, however, suggested that it could be feasible for the development (with appropriate supplementary landscaping, design and layout) to be integrated into the existing landscape without significant adverse impact on the openness of the green wedge*."

6.2.3 The response also expressed the need for a "*comprehensive LVIA… to inform and support a formal proposal*." However, when discussing the consideration of potential for cumulative impacts, it noted that "*I am not aware at this time of any other existing ground mounted scale solar developments or permissions for such schemes in this part of the vale*". It was suggested that any LVIA could "*take account of any off-shore visual impacts*".

6.2.4 With regard to nearby residential dwellings, the response stated that "*it is unlikely that the solar panels would be overbearing or result in overshadowing of dwellings, however consideration should be given to the need for appropriate buffers where they would be located close to residential development in order to mitigate the impact*".

Screening Direction

6.2.5 An EIA Screening Opinion was received from the Council dated 27th March 2026 (Ref: P/DC/2025/01286/SC1) which determined that "*there is a requirement for a focussed Environmental Impact Assessment to be submitted. This is due to the size of the development, the local context, and the potential for significant adverse landscape and visual impacts*" among other matters that are subject to the other sections of this EIA Scoping Report. The report accompanying the screening opinion decision notice explains that no response had been received from the Council's Landscape Architect.

6.2.6 In discussing the characteristics of the Proposed Development and the likelihood of it to have significant effects on the environment, the report explains that "*the proposed ground coverage for the development indicated on the submitted plan is extensive, but the panels themselves, though mounted, would not be particularly tall and panel design is standardised. There are other existing solar sites in the borough, but none within proximity of the site and therefore unlikely to be any cumulative impacts in this regard*."

6.2.7 The report explains that the Site "*is within Green Wedge and coastal area and therefore the landscape impact also warrants careful consideration. Although the topography and vegetation may offer some screening to more distant viewpoints, the site visibility within the landscape and public footpaths / Wales Coastal path, as well as consideration of off-shore impacts, would need to be established through detailed assessment. Accordingly, the application would be expected to be accompanied by a Landscape Visual Impact Assessment. The applicant's submission assert that there would be potentially minor / moderate effects within 1km but no likely significant residual effects are anticipated. There is some potential for impacts to be mitigated through siting, design and landscaping, but nevertheless it is considered that due to the extent of the development area, nature of the site, and information provided at this stage, there is potential for significant effects*".

6.2.8 No further consultations in relation to landscape and visual have been undertaken at the time of writing this EIA Scoping Report.

6.3 Study Area

6.3.1 The ISEP (formally IEMA) Guidance[19] recommends a proportionate EIA focused on the potential likely significant effects of a development. The LVIA Study Area must therefore be large enough to capture all likely significant effects. However, not so large that it may be considered disproportionate, if it makes understanding the key effects of the project more difficult by including extraneous baseline information, and hence receptors that are unlikely to be significantly affected by the Proposed Development.

6.3.2 This is supported by the Landscape Institute[20] (Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)) (paragraph 3.16) which recommends that "*The level of detail provided should be that which is reasonably required to assess the likely significant effects*." Paragraph 5.2 also states that "*The LVIA Study Area should include the site itself and the full extent of the wider landscape around it which the project may influence in a significant manner*."

6.3.3 The LVIA Study Area is based on professional judgement which aims to include those areas that have potential to be significantly affected by the Proposed Development. This judgement is based on an understanding of the local landscape character and the scale of the construction and development proposed through early appraisal work, including visits to the Site and the surrounding area.

6.3.4 The initial LVA considered a study area of 5km from the Site Boundary working on the assumption that the entire Site was covered by solar panels. Field observations established that the potential for significant effects would be contained within close proximity of the Site due to the existing vegetation and surrounding topography which provides screening of the Proposed Development Area. This was validated through subsequent visits as the Proposed Development Area was established and refined. The Proposed Development Area represents the physical extent of the proposed infrastructure.

[19] IEMA (2017). Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice. Available online at: https://www.isepglobal.org/media/zi2e44qq/delivering-proportionate-eia.pdf

[20] Landscape Institute (2013). Guidelines for Landscape and Visual Impact Assessment: Third Edition.

6.3.5 Furthermore, a Zone of Theoretical Visibility (ZTV) (**Figure 6 (Appendix A**) has been produced to inform the selection of receptors and will form the basis of the LVIA. The ZTV was generated with computer modelling using 4m high transmitters representing solar panels and 3.5m high transmitters for the project substation across the Environment Agency Light Detection and Ranging (LiDAR) Digital Surface Model (DSM). This also confirmed that the potential visibility of the Proposed Development would be concentrated within the 1km study area, where any potential significant effects to the landscape character or visual amenity of the area are most likely to be perceived. Taking the above into consideration, the study area for the LVIA has been set at 1km from the Proposed Development Area.

6.3.6 The 1km study area is consistent with the consultation responses outlined above (see **Section 6.2**). While the responses noted potential for significant adverse effects within this distance, it did not challenge its suitability as the study area for assessment, nor did it identify the potential for any significant adverse effects extending beyond this extent.

6.3.7 The consultation responses summarised in **Section 6.2**, stated that there are no developments of a similar nature located within the proposed 1km study area that will cumulatively give rise to significant landscape and visual effects. However, other developments that are likely to modify the baseline in the way in which the landscape character is perceived or in the way in which people experience views of the landscape as visual amenity will be considered. This will be contained within the 1km study area where there is potential for significant adverse effects to occur as a result of the Proposed Development. Beyond 1km, cumulative effects arising from the Proposed Development are considered unlikely to be significant and are therefore scoped out from further assessment. The projects to be considered in the cumulative assessment are presented in **Section 6.7**.

6.4 Baseline Conditions

Sources of Information to Inform Baseline Characterisation

6.4.1 Sources of information reviewed during desk-based research to inform landscape and visual amenity aspects of this Scoping Report include the following:

- NRW's National Landscape Character Areas (NLCAs);
- NRW's LANDMAP all Wales Geographic Information System maps and surveys;
- National and local planning designations relevant to landscape and visual matters; and
- Ordnance Survey Maps and aerial photography.

6.4.2 To supplement desk-based research and the initial LVA, preliminary site visits were undertaken in February 2025, September 2025, and March 2026 to understand the land-use, landform, landscape characteristics and settlement pattern around Proposed Development Area and Site Boundary. In addition, the site visits were undertaken to review and validate the extent of the study area and location of proposed viewpoints for the LVIA.

Site Context

6.4.3 The Proposed Development Area is part of a wider landholding that comprises undulating agricultural fields defined by hedges, tree belts/groups and woodland blocks in varying condition, occupying the top of coastal cliffs overlooking the Severn Estuary. The Study Area comprises an agricultural and recreational landscape between the settlements of Lower Penarth (north) and Sully (west) as summarised below.

6.4.4 The character and predominant land use of the Study Area, including the Proposed Development Area and the immediately surrounding landscape, is agricultural fields. The main transport route through the Study Area is Lavernock Road (B4267) that runs between Lower Penarth and Sully. Recreational opportunities include the Wales Coast Path (WCP) that follows the coastal cliffs with a short section passing along the western boundary through a field in the southern part of the Proposed Development Area. One other footpath currently crosses east-west across the Proposed Development Area to the east of St Mary's Well Bay Road. Lavernock Nature Reserve, including a footpath that forms part of the WCP, is located adjacent to the Proposed Development Area to the south-east. Cosmeston Lakes Country Park also contains a network of internal paths including a footpath (PRoW) crossing agricultural fields east-west in the northern part of the Study Area. There are also three holiday/caravan sites contained within the Study Area with one (The Bay Caravan Park) adjacent to the Proposed Development Area.

Landscape Character

National Landscape Character

6.4.5 NRW has divided Wales into 48 NLCAs. The NRW Landscape Character Map for Wales is referred to for a strategic understanding of landscape character within the Study Area. This outlines the wider setting for the Proposed Development and provides a context for the description of local landscape character.

6.4.6 The Study Area is contained completely within the **NLCA35 Cardiff, Barry and Newport**[21] which is described as (underlined text has been used by WSP to highlight those features that are most relevant to the Study Area and the Proposed Development):

[21] Natural Resource Wales, (2014). National Character Areas NLCA35 – Cardiff, Barry and Newport. Available online at: Natural Resources Wales / National Landscape Character Areas (NLCA) [Accessed April 2026].

"Two cities and associated suburbs and satellite towns dominate this part of south-east Wales. They include Wales' capital and largest settlement, Cardiff, as well as Newport, Cwmbran, Pontypool, Penarth and Barry. The area forms a busy transport and development corridor. It occupies the coastal lowlands between the Severn estuary with its levels, and the edge of the South Wales Valleys with their uplands. The area includes major ports at Cardiff, Barry and Newport, and associated industrial infrastructure. There are also extensive residential, suburban areas and major retail, business and recreational facilities. There is an intensive network of busy roads and railways, including part of the M4 corridor.

…

Yet despite all this development, the area also includes Wales' only Green belt (around Cardiff) and appealing areas of sylvan woodland, pastures and hedgerows in open countryside. This is particularly notable in the section between greater Cardiff and Newport. Green wedges and corridors also penetrate urban areas, for example along river corridors such as the River Taff through Cardiff, and greenspace in the planned the new town of Cwmbran."

6.4.7 The key characteristics of NLCA35 are described as:

- *"Edge to the coalfield - lowland margins to the south-east of the South Wales coalfield. A varied geology of mudstones, sandstones and a few outcrops of limestone. Many glacial moraine features.*
- *Busy, heavily urbanised areas - containing Cardiff, and other large settlements including Penarth and Barry to the south to the west, and the city of Newport and new town of Cwmbran to the east.*
- *Cardiff – capital city, largest urban area and principle administrative centre for Wales. The Romans established a settlement at Cardiff, remains visible in Cardiff Castle. Mid C19th growth as the most important port in the world for coal export. Cardiff Bay has since regenerated as a secondary focus in the city. The urban form of Cardiff expands across much of the surrounding landscape.*
- *Ports – Cardiff, together with Barry and Newport with its industrialised river frontage.*
- *Urban fringe / peri-urban areas – for example land between Penarth and Barry, which contains linear settlement linked by rural roads but has an urban fringe character in parts.*

- *Green belt with lush fieldscapes and woodlands - rural pastures and woodlands provide a contrasting peaceful, providing a green setting. Cardiff has the only green belt in Wales. Medium sized fields are mainly enclosed by hedgerows with frequent hedgerow trees.*
- *Prominent landmark structures - include Millennium Stadium in Cardiff; the series of bridges in Newport including the Transporter bridge; the chemical works at Barry, standing out prominently on the skyline.*
- *The M4 motorway - forms a noisy, busy corridor between and bypassing the two cities, together with the main railway.*
- *Green wedges / corridors penetrating urban areas – including wooded river corridors in Cardiff and Newport and the coast at Barry.*
- *Lowland river corridors - Rivers Taff and Ely drain into Cardiff Bay and the tidal River Rhymney runs through east Cardiff; the tidal River Usk forms the focus of Newport with the River Ebbw meandering to the south east.*
- *St Fagans - National History Museum displays around 40 vernacular buildings in a picturesque setting adjacent to St Fagans Castle."*

6.4.8 As the description and key characteristics of the NLCA are mainly concerned with the urban nature of the area, this is not relevant to the Study Area which is predominantly agricultural. While this may be included in the LVIA to provide context, they are broad strategic classifications which when considering the relative scale of the NLCA in comparison to the Proposed Development will not be significantly affected by the Proposed Development. In the main landscape features that are identified as contributing to the character of the area will remain. Therefore, the NLCA will not be included as a landscape receptor or form part of the assessment as significant adverse effects are unlikely to occur.

Regional Landscape Character

6.4.9 There is no published landscape character assessment for the Vale of Glamorgan borough. Instead, LANDMAP is cited as the relevant information source for landscape character.

Local Landscape Character

6.4.10 The NRW LANDMAP[22] landscape character information has been referred to for an understanding of landscape character within the Study Area. This outlines the setting for the Proposed Development Area within the Study Area. LANDMAP provides an all-Wales resource of landscape characteristics, qualities, and influences, arranged within five aspect layers. For the purposes of EIA Scoping, the host Visual and Sensory Aspect Area has been identified. As part of any ongoing LVIA, the filtering process will be applied as per GN46 LANDMAP guidance[23].

6.4.11 The entire Proposed Development Area is located within the **Lavernock Hinterland (VLFGLVS787)**[24] Visual & Sensory Aspect Areas (VSAA) with an overall evaluation of Moderate and is described as (underlined text has been used by WSP to highlight those features that are most relevant to the Study Area and the Proposed Development):

"The area is a rolling/undulating lowland, the highest point is approximately 61m AOD, a hilltop to the east of Swanbridge, the lowest 15m AOD on the top of cliffs facing the Bristol Channel. The area is covered by a mosaic of pastoral fields enclosed by hedgerows. Often these hedgerows are overgrown, many containing trees. The dismantled railway line to the north west of the area is also overgrown with vegetation and creates a strong edge to the area and also gives a surprisingly enclosed feel to parts of it. Pines feature in the area east of Swanbridge. There are several settlements in the area, including farms and hamlets linked by narrow roads which show signs of overuse at parking places. Lavernock Farm to the south east of the area has been developed as a campsite/holiday village and there is a caravan park at Swanbridge. The areas feeling of tranquillity has been affected by these developments. The areas hedgerows appear neglected in places as do some farm gates and fencing. Lavernock Farm camping ground and holiday village, together with some refurbished houses are suburban in appearance. The area's rural character is being eroded by these changes. There are occasional views to the sea which influences the character of the area."

[22] Natural Resource Wales, (2026). LANDMAP – the Welsh landscape baseline. Available online at: Natural Resources Wales / LANDMAP - the Welsh landscape baseline [Accessed April 2026].
[23] Natural Resource Wales, (2025). Using LANDMAP in Landscape and Visual Impact Assessments GN46. Available online at: Natural Resources Wales / Using LANDMAP in Landscape and Visual Impact Assessments GN46 [Accessed April 2026].
[24] Natural Resource Wales, (2015). Survey Details for VLFGLVS787 – 2026-04029. Available online at: Landmap Portal [Accessed April 2026].

Marine Character

6.4.12 On behalf of Welsh Government, NRW commissioned Land Use Consultants (LUC) to prepare a National Seascape Assessment for Wales[25] to inform the production of the Welsh National Marine Plan. The seascape assessment covers all parts of Welsh inshore waters where land-sea interaction is focused, which includes the area between the high-water mark and 12 nautical miles out to sea. The seascape assessment identified 29no. National Marine Character Areas (NMCAs) around the coastal waters of Wales within this area with a profile for each describing Key Characteristics, influences and qualities. The NMCA relevant to the Study Area is **MCA 29: Seven Estuary (Wales)**. The key characteristics of the MCA are not directly relevant to the Study Area and would not be affected by the Proposed Development Area. Therefore, while this may be included in the LVIA to provide context, the MCA will not be included as a landscape receptor or form part of the assessment as significant adverse effects are unlikely to occur. This is due to limited inter-visibility and intervening landform of coastal cliffs providing physical separation.

Landscape Planning Designations

National Designated Landscapes

6.4.13 There are no nationally designated landscapes National Parks and National Landscapes (former Areas of Outstanding Natural Beauty) within the Study Area.

Local Designated Landscapes/Landscape Policy Areas

6.4.14 The entire Proposed Development Area is located within the **South Penarth to Sully Green Wedge**[26]. Policy MG18 – Green Wedges of the Vale of Glamorgan Local Development Plan 2011-202627 states:

"Policy MG18 – Green Wedges:

Green Wedges have been identified to prevent the coalescence of settlements and to retained the openness of land at the following locations:

…

6. South Penarth to Sully;

…

Within these areas development which prejudices the open nature of the land will not be permitted."

[25] Natural Resource Wales, (2023). Marine Character Areas. Available online at: Natural Resources Wales / Marine Character Areas [Accessed: April 2026].
[26] Vale of Glamorgan Council. Interactive Map. Available online at: My Council [Accessed: April 2026].
[27] Vale of Glamorgan Council, (2017). Local Development Plan 2011-2026 Written Statement. Available online at: Adopted-LDP-Written-Statement-June-2017-final-interactive-web-version.pdf [Accessed: April 2026].

6.4.15 According to the Green Wedge Background Paper[28], the primary purposes of the South Penarth to Sully Green Wedge is to:

- "Protect vulnerable undeveloped land;
- Prevent urban coalescence between and within settlements; and
- Protect the open nature of the land."

6.4.16 The secondary purpose is to:

- "Maintain the setting of the built-up area."

6.4.17 The Proposed Development Area being located within the Green Wedge provides context; however, it will not be included in the LVIA. As it is a strategic planning policy, the Green Wedge would be subject to and considered within a separate planning statement or assessment if required.

Visual Amenity

6.4.18 A ZTV for the Proposed Development Area is provided on **Figure 6 (Appendix A)**. This has been produced using the area proposed to accommodate the ground-mounted solar panels (and associated infrastructure) and the Project Substation Compound. The undulating coastal cliffs landscape focuses the ZTV around the immediate vicinity of the Proposed Development Area with some limited visibility extending into the surrounding Study Area.

6.4.19 While there are some potential areas of visibility beyond the established 1km Study Area, the field observations have established that, in reality, the ability to obtain views from publicly accessible locations is limited due to the surrounding vegetation screening and topography, and significant adverse harm to the visual experience or amenity of receptors is unlikely.

Visual Receptors

6.4.20 A combination of ZTV analysis, desk-based research, and site work has been used to establish a visual baseline. The presence of two caravan parks and the WCP directly adjacent to the Site Boundary, along with a third caravan site and the Cosmeston Lakes Country Park located in the Study Area, suggests that this is a well-used recreational landscape, particularly during peak holiday periods, in-between the settlements of Penarth and Sully.

[28] Vale of Glamorgan Council, (2011). Local Development Plan 2011-2026 Green Wedge Background Paper. Available online at: Green_Wedge_Background_Paper_2011 [Accessed: April 2026].

6.4.21 The ZTV, together with in the field observations, have established that the potential for receptors to experience change to their visual amenity is largely contained within close proximity to the Proposed Development Area. While there may be opportunity for views towards the Proposed Development Area from locations in the surrounding Study Area, these are limited and not likely to give rise to significant effects.

6.4.22 The visual receptors to be considered are set out below.

Settlements and Residential Properties:

- 6no. individual residential properties along Fort Road and St Mary's Well Bay Road within the immediate vicinity of the Proposed Development Area.

People using Recreational Routes/Areas:

- Users of WCP (short section located within the Proposed Development Area); and
- Users of individual footpaths (often connecting local roads or PRoW rather than part of wider network throughout the landscape);
    - Footpath L1/5/2 (crosses the Proposed Development Area); and
    - Footpath L1/1/1 (within Lavernock Nature Reserve).

Drivers, passengers, and cyclists (where permitted) using the:

- Fort Road (local road);
- St Mary's Well Bay Road (local road); and
- Lavernock Road (B4267).

Recreational and tourist destinations:

- Lavernock Nature Reserve; and
- The Bay Caravan Park.

Future Baseline Receptors:

6.4.23 A number of developments have been identified within the Study Area that are likely to come forward, bringing additional people/users (visual receptors) to the landscape that would have potential to experience views of the Proposed Development in the future.

6.4.24 These will be described as part of a future baseline section and, where relevant, assessed as separate individual future visual receptors within the LVIA.

6.4.25 These future visual receptors include:

- Future residents of Land at Upper Cosmeston Farm (2020/01170/OUT) that will from the new edge of the settlement of Cosmeston;
- Future users of Public Open Space Allocation (10) (Policy MG28) within the future residential development above; and
- Future users of Active Travel Route Sully to Cosmeston (2025/00493/RG3).

6.4.26 Given the limited extent of the ZTV covering Sully Island and offshore, as well as the nature of views looking towards the Proposed Development Area, there is not expected to be significant effects to the visual amenity for offshore receptors.

Proposed Viewpoints

6.4.27 **Table 6-1** sets out the proposed viewpoint photography locations that will be included in the LVIA. These help to illustrate the character of the landscape within the Study Area and also represent the visual experience of users (visual receptors) within the landscape in the context of the Proposed Development.

6.4.28 The proposed viewpoints will be used to inform judgements of effects to both landscape character and visual amenity that may arise as a result of the Proposed Development. The viewpoint locations have been selected using desktop analysis of the ZTV along with in the field observations. Where the Proposed Development is not expected to cause a significant adverse effect to the visual amenity of users that are represented by a viewpoint photograph, the viewpoint and the associated receptors will be scoped out and not taken further into the assessment. Only those visual receptors that are likely to experience a significant effect to their visual amenity will be reported in the LVIA Chapter.

Table 6-1: Proposed Viewpoints

Viewpoint Reference	Viewpoint Name	Distance and Direction from Proposed Development Area	Location (Easting / Northing)	Receptor/Reason for Selection
1	Future Residential Development and POS Allocation (10) – Land at Upper Cosmeston Farm (2020/01170/OUT)	820m, north-east	318443, 169159	Future residents and recreational users
2	Wales Coast Path to the east (Footpath L1/2/1)	780m, east, south-east	318592, 168847	Recreational users
3	Lavernock Nature Reserve	130m, south-east	318234, 168173	Recreational users
4	Fort Road	6m, east	317930, 168487	Road users
5	St Mary's Well Bay Road	3m, west and 6m, east	317537, 168123	Road users and recreational users of local PRoW network including WCP
6	The Bay Caravan Park	10m, east	317516, 168030	Visitors to caravan park as well as users of St Mary's Well Bay Road above

Viewpoint Reference	Viewpoint Name	Distance and Direction from Proposed Development Area	Location (Easting / Northing)	Receptor/Reason for Selection
7	Wales Coast Path (Footpath L1/7/1 / L1/8/1) through Proposed Development Area	3m within western boundary	317651, 167997	Recreational users
8	Lavernock Road (B467)	190m, north	317604, 168678	Road users as well as recreational users of PRoW network including those accessing Cosmeston Lakes County Park
9	Footpath L1/4/2 south of Cosmeston Lakes	330m, north	317510, 168803	Recreational users
10	Cosmeston Lakes Country Park	850m, north	317576, 169327	Recreational users
11	Residential development at Swanbridge Road / Melrose Walk	690m, north-west	316308, 168575	Residents and road users

6.5 Mitigation: Minimising Harm to Landscape Character and Visual Amenity

Embedded Mitigation

6.5.1 At this stage, the following preliminary mitigation measures of relevance to landscape and visual include:

- Siting of proposed infrastructure:
  - An initial LVA in March 2025 supported the identification of suitable fields within the Site Boundary to accommodate infrastructure and minimise adverse effects to the landscape character and visual amenity of the area (Design Point 2, **paragraphs 2.2.11** to **2.2.14**).
  - The design incorporates increased separation (up to 20m) between the Wales Coastal Path and infrastructure in two fields located immediately to the east of The Bay Caravan Park (Design Point 5, **paragraph 2.2.21**).
  - Removal of infrastructure within the triangular field located adjacent to the B4267 Lavernock Road and St Mary's Well Bay Road to reduce the scale of the Proposed Development and potential adverse effects to the landscape character and visual amenity of the area (Design Point 5, **paragraph 2.2.21**).

- Sensitive design and location of boundary fencing, the use of strategically located native planting to provide local, longer-term screening and filtering of views, and the creation of new forms of grassland cover, where appropriate, to address effects on visual amenity.

6.5.2 Beyond that, mitigation of landscape and visual effects will principally take the form of further embedded design considerations, including the appearance and array arrangement of solar panels, the sensitive location of service access, ancillary plant and buildings along with the retention of existing landform, field hedgerows and boundaries that define existing land use, underlying landscape pattern, and land management.

6.5.3 Further consideration will be given during the iterative EIA process to ensure that any mitigation suggested to minimise effects to visual amenity is consistent and ties into the existing landscape character of the Study Area.

6.6 Description of Likely Significant Effects

6.6.1 Work undertaken to date including initial LPA consultations, preliminary mapping, ZTV, and preliminary site appraisal work has enabled some initial conclusions to be drawn on likely significant effects of the Proposed Development at construction, operational and decommissioning phases.

Construction and Decommissioning

6.6.2 The landscape and visual effect of activities during the construction and decommissioning phase will form part of the LVIA. Activities will be uncharacteristic and visually intrusive but for a short-term duration (6-9 months) and have a low level of interaction with the physical landscape elements and the existing landform. Activity during construction has potential to cause a significant effect to the character of the study area and visual experience of users within the immediate vicinity of the Proposed Development Area over a relatively short period only.

Operation

6.6.3 The Proposed Development will appear as a new form of landcover and change the character and use of the immediate landscape from agricultural to solar arrays, while retaining the existing field patterns and hedgerows. The change of character would be contained within the locality of the Proposed Development Area and within the host Lavernock Hinterland LANDMAP Visual & Sensory Aspect Area and other related Aspect Areas. There is potential for significant effects to the localised character immediately surrounding the Proposed Development Area which will form part of the LVIA.

6.6.4 The Proposed Development will alter the visual environment of PRoW users that pass through the Proposed Development Area. This would only relate to a very short section of the Wales Coast Path (Footpath L1/7/1 and L1/8/1) and local PRoW L1/5/2 where effects have the potential to be significant.

6.6.5 There would likely be views of the Proposed Development from Fort Road and St Mary's Well Bay Road that run immediately adjacent to fields within the Proposed Development Area. Due to the close proximity and scale of the Proposed Development, there is potential for significant effects to their visual amenity.

6.6.6 Given the high sensitivity of residential and recreational receptors within close proximity to the Proposed Development Area, there is potential for significant effects to their visual amenity due to the change arising from the Proposed Development. This would also be the case for future residents and recreational users of the landscape that are likely to be introduced through the new residential and active travel developments currently identified as approved within the Study Area. However, views of the Proposed Development from further afield within the Study Area, would be curtailed by intervening vegetation, landscape features and landform. These views would be experienced from an increased distance so the changes arising from the Proposed Development, are less likely to result in significant effects to their visual amenity in these locations.

6.6.7 The Landscape and Visual receptors scoped in and out of the LVIA are included in **Table 6-2** below. The receptors identified will be assessed at all phases of the Proposed Development including Construction, Operation and Decommissioning.

Table 6-2: Potential Significant Effects and Landscape and Visual Receptors Scoped In or Out of the Assessment

Receptors	Scoped In	Scoped Out	Justification
Landscape Receptors			
NLCA35 Cardiff, Barry and Newport		✓	Significant effects are unlikely due to the broad descriptions of characteristics and the scale of the Proposed Development compared to the NLCA.
Lavernock Hinterland VSAA and other relevant host and adjacent LANDMAP Aspect Areas (following the filtering process as per GN46 LANDMAP guidance) covering: - Geological Landscapes - Landscape Habitats - Visual and Sensory - Historic Landscape - Cultural Landscape Services	✓		Direct changes to the character of Aspect Areas where there is potential for localised significant effects within the immediate vicinity of the Proposed Development Area.
MCA 29: Seven Estuary (Wales).		✓	Limited inter-visibility with the Proposed Development as indicated by the ZTV. Therefore

Receptors	Scoped In	Scoped Out	Justification
			unlikely that Key Characteristics of the MCA would be directly and significantly affected.
Effects on landscape character and visual amenity outside of 1km of the Proposed Development Area		✓	Sparse coverage by the ZTV and in the field observations established that significant adverse effects are unlikely to occur beyond this distance due to the scale of the proposals in combination with the landform and intervening features.
Consideration of cumulative landscape effects	✓		Potential for significant cumulative effects on the character of the area arising from the Proposed Development in combination with future residential development at Upper Cosmeston Farm (2020/01170/OUT) due to the change to the baseline situation.
Visual Receptors			
6no. individual residential properties along Fort Road and St Mary's Well Bay Road within the immediate vicinity of the Proposed Development Area boundary	✓		Potential for significant effects to visual amenity due to close proximity of these properties to the Proposed Development Area.
3no. residential properties at eastern end of Fort Road around St Lawrence's Church		✓	No inter-visibility between them and the Proposed Development, due to intervening landform and/or features such as vegetation or buildings (as shown on the ZTV).
Residents on the southern edge of Cosmeston		✓	Limited intervisibility, with the field observations establishing that the Proposed Development is not likely to cause significant adverse effect to their visual amenity, due to combination of distance and intervening field boundary vegetation.
Residential development at Swanbridge Road / Melrose Walk		✓	Partial coverage by the ZTV suggesting that views of the Proposed Development would be intermittent and only from certain positions. In the field, observations established that views of the Proposed Development Area are heavily restricted where it is seen at a distance. Therefore, due to the nature of the views and the limited extent that views are available, it is considered that a significant effect would not arise.
Recreational users of WCP (Footpaths L/1/1/1 and L1/7/1 / L1/8/1 through the Proposed Development Area)	✓		Visual experience will change due the Proposed Development, with potential for significant effects to the visual amenity of users.
Recreational users of remaining length of SWCP (including Footpath L1/2/1)		✓	Minimal coverage by the ZTV and closest fields were excluded from the Proposed Development Area following initial appraisal. As such, significant adverse effects to the visual amenity of users of this section of the WCP will be avoided.
Recreational users of Footpath L1/5/2 (though the Proposed Development Area)	✓		Visual experience will change due to the Proposed Development with potential for significant effects to the visual amenity of users.
Recreational users of Footpath L1/1/1 (through Lavernock Nature Reserve)	✓		Potential for significant effects to visual amenity due to close proximity of the footpath to the Proposed Development Area and the nature of views.

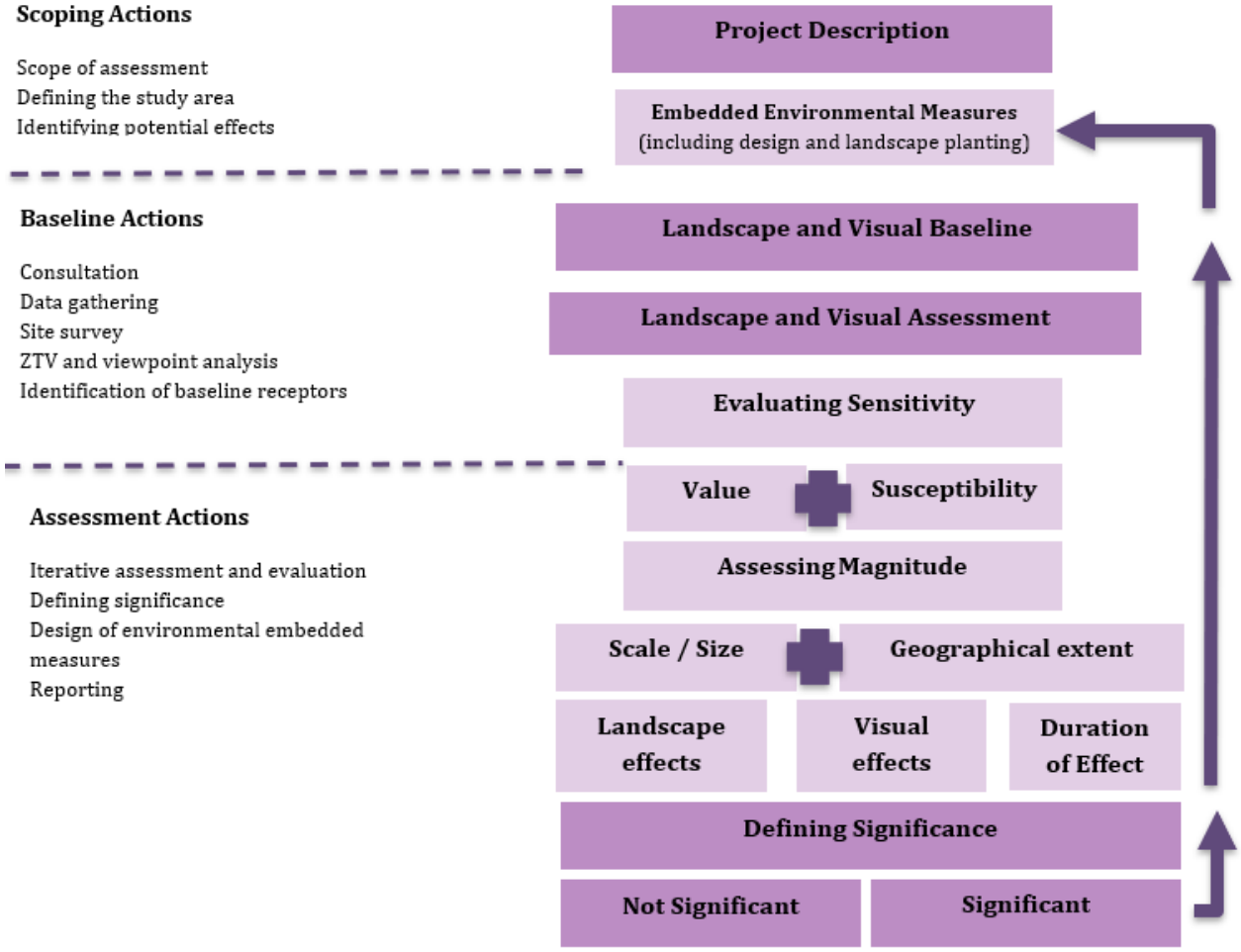
Receptors	Scoped In	Scoped Out	Justification
Recreational users of Footpath L1/4/2 / L1/4/1 / S13/2/1 (through agricultural fields south of Cosmeston Lakes)		✓	Partial coverage by the ZTV suggesting that views of the Proposed Development would be intermittent and only from certain positions. In the field, observations established that views of the Proposed Development Area are heavily restricted where it is seen at a distance. Therefore, due to the nature of the views and the limited extent that views are available, it is considered that a significant effect would not arise.
Users of Fort Road	✓		Potential for significant effects to visual amenity due to close proximity of the road to the Proposed Development Area.
Users of St Mary's Well Bay Road	✓		Potential for significant effects to visual amenity due to close proximity of the road to the Proposed Development Area.
Users of Lavernock Road(B4267).		✓	Significant effects to the visual amenity of users of this road are unlikely due to the speed of travel combined with the extent/duration that the Proposed Development or the associated activities in this location would be visible, reducing overall level of effect to not significant.
Users of Swanbridge Road		✓	Partial coverage by the ZTV, suggesting that views of the Proposed Development would be intermittent and only from certain positions. Field observations established that views of the Proposed Development Area are heavily restricted where it is seen at a distance. Therefore, due to the nature of the views and the limited extent that views are available, it is considered that a significant effect would not arise.
Recreational users of Lavernock Nature Reserve	✓		Potential for significant effects to visual amenity due to close proximity of the nature reserve to the Proposed Development Area and the nature of views.
Cosmeston Lakes Country Park		✓	Partial coverage by the ZTV, suggesting that views of the Proposed Development would be intermittent and only from certain positions. Field observations established that views of the Proposed Development Area are heavily restricted where it is seen at a distance. Therefore, due to the nature of the views and the limited extent that views are available, it is considered that a significant effect would not arise.
Visitors to The Bay Caravan Park	✓		Potential for significant effects to visual amenity due to close proximity of the Park to the Proposed Development Area.
Visitors to Marconi Holiday Village		✓	Orientation of properties are towards the sea in the opposite direction to the Proposed Development Area, so significant adverse effects to visual amenity are not expected.
Offshore views including Sully Island.		✓	Given the limited extent of ZTV coverage as well as the nature of views looking towards the Proposed Development Area there is not expected to be significant effect to the visual amenity of receptors in these locations.

Receptors	Scoped In	Scoped Out	Justification
Residential Visual Amenity Assessment (RVAA)		✓	Conclusions on the visual effect on relevant residential properties can be determined adequately for the purpose of the EIA from adjacent publicly accessible locations. They will be included as visual receptors as above but will not include visiting the properties.
Consideration of cumulative visual effects		✓	There are no opportunities where the Proposed Development would be seen in combination, successively or sequentially with the Cumulative Schemes that would give rise significant effects on the visual experience of receptors in the landscape.
Future Visual Receptors			
Future residents of Land at Upper Cosmeston Farm (2020/01170/OUT)		✓	Due to the distance between this location and the Proposed Development Area in combination with the intervening agricultural land that will remain, landscape features and landform offering screening and containment the overriding nature of views from properties is likely to remain. The Proposed Development is not likely to be a prominent feature in views from properties. Therefore, significant effects to the visual amenity of residents in this location are not likely to arise.
Future users of Public Open Space Allocation (10) (Policy MG28) within the future residential development above		✓	Field observations established that views of the Proposed Development Area are heavily restricted where it is seen at a distance. Therefore, due to the nature of the views and the limited extent that views would likely be available within a residential development it is considered that a significant effect would not arise.
Future users of the consented Active Travel Route Sully to Cosmeston (2025/00493/RG3)	✓		Potential for significant effects to visual amenity due to elevated position and close proximity of the route compared to the Proposed Development Area.

6.7 Proposed Assessment Methodology

6.7.1 The LVIA will be undertaken in accordance with best practice and following the Landscape Institute ISEP (formally IEMA) guidelines (GLVIA3) and subsequent technical notes. The assessment approach and process are summarised in the flow diagram (**Plate 6-1**) from GLVIA3.

Plate 6-1: Overview of Approach to Landscape and Visual Impact Assessment



6.7.2 An overview of the LVIA methodology is provided below. The ES Chapter will contain a summary of the methodology with a full detailed version provided as an appendix.

Landscape Effects

6.7.3 Landscape effects are defined by the Landscape Institute in GLVIA 3, paragraphs 5.1 and 5.2 as follows:

"An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern" ... "is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character." ... "The area of landscape that should be covered in assessing landscape effects should include the site itself and the full extent of the wider landscape around it which the Proposed Development may influence in a significant manner."

6.7.4 The landscape effects occurring during the construction and operational periods may therefore include, but are not restricted to, the following:

- Changes to landscape elements: the addition of new elements (i.e. solar panels, project substation and battery storage) or the removal of existing elements such as trees and vegetation as well as other characteristic elements or valued features of the landscape character;
- Changes to landscape qualities: degradation or erosion of landscape elements and patterns and perceptual characteristics, particularly those that form key characteristic elements of landscape character types/areas or contribute to the landscape value; and
- Changes to landscape character: landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities (including perceptual characteristics) and the addition of new features, the magnitude of which is sufficient to alter the overall landscape character within a particular area.

6.7.5 Development may have a direct effect on the landscape as well as an indirect effect which would be perceived from the wider landscape, outside the immediate site area and its associated landscape character.

Visual Effects

6.7.6 Visual Effects are concerned wholly with the effect of the development on views, and the general visual amenity, and are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern" ... " is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

6.7.7 Visual effects are identified for different receptors (people) who would experience the view(s) at their places of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- a change to an existing static view;
- a change to sequential views; and
- or a change wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view(s).

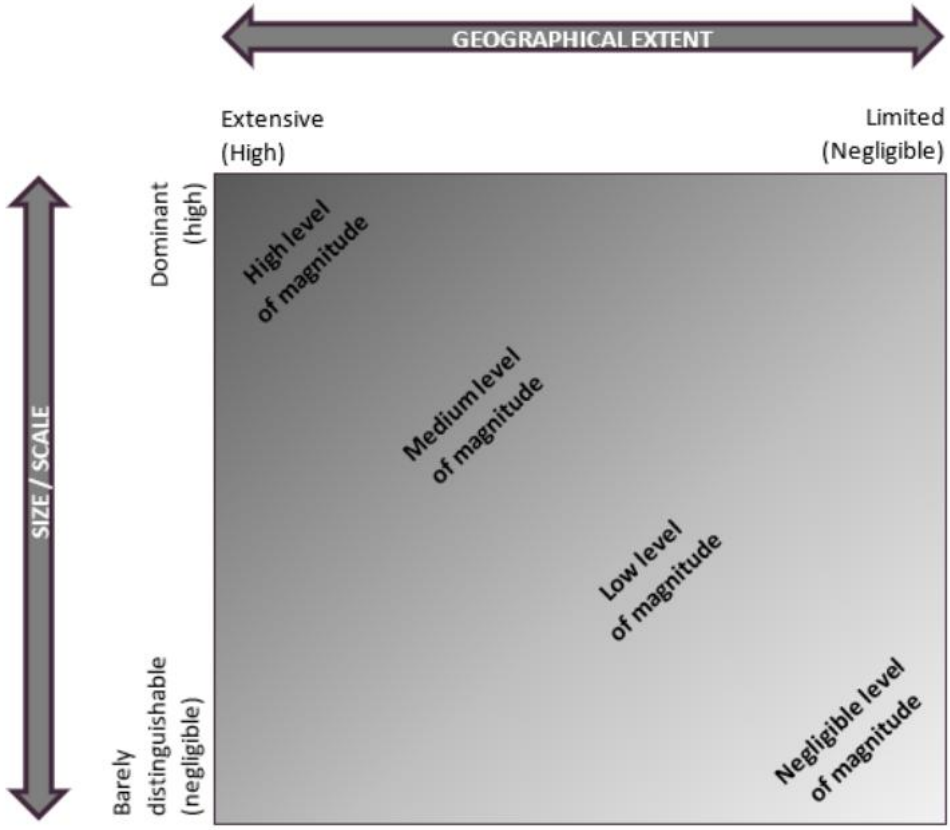
6.7.8 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of each visual receptor (or range of sensitivities for receptor groups) and the magnitude of change that would be brought about by the construction and operation of the Proposed Development. Judgements regarding the magnitude of change to visual receptors will be informed by viewpoint photography that represents the visual experience of receptors (users) taken from the locations included in **Table 6-1** and illustrated along with the ZTV in **Figure 6 (Appendix A)**.

Magnitude of Change (Two-Step Process)

6.7.9 The magnitude of landscape and visual change depends upon a combination of factors including size / scale of change, geographical extent and duration. Detailed descriptions of these factors specific to landscape and visual receptors will be provided in the detailed methodology along with tables that apply a rating to the different levels of those factors.

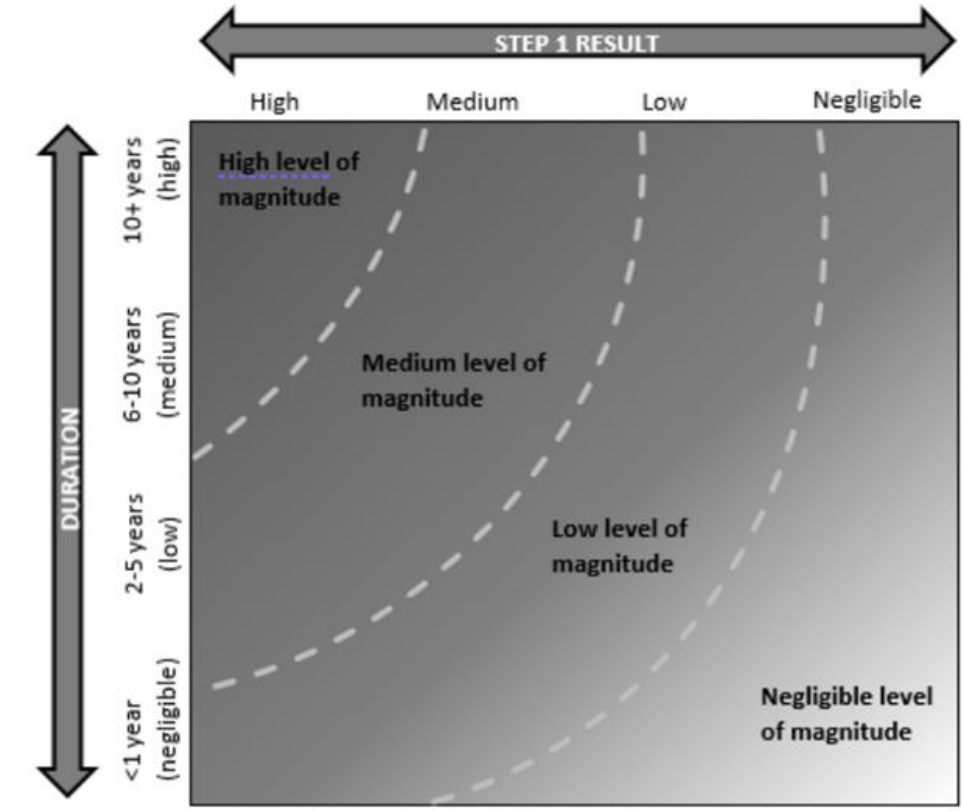
6.7.10 **Plate 6-2** and **Plate 6-3** illustrate how these aspects are combined through a two-step process. First by considering size and scale together with the geographical extent in step one. The result of this provides a preliminary magnitude of change result.

Plate 6-2: Magnitude of Change Diagram: Step 1



6.7.11 As illustrated below in the diagram presented as **Plate 6-3**, for step two, the preliminary result from step 1 is then considered alongside the duration and reversibility which can either increase or decrease the rating accordingly. For example, a high magnitude of change could be reduced if this is only going to be experienced over a short period of time. This is typical of construction activities where they are both short term and of a temporary nature.

Plate 6-3: Magnitude of Change Diagram: Step 2



Significance Criteria

6.7.12 The matrix presented in **Table 6-3** is used as a guide to illustrate the LVIA process. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.

6.7.13 The landscape and visual assessment unavoidably involves a combination of quantitative and qualitative assessment, and wherever possible cross references will be made to objective evidence, baseline figures and / or to viewpoint photography to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly each effect results from its own unique set of circumstances and have been assessed on a case-by-case basis. The matrix as presented in **Table 6-3** should therefore be considered as a guide and any deviation from this guide will be clearly explained in the assessment.

6.7.14 Using professional judgement and with reference to the relevant EIA Regulations, it is important to determine whether the effects, assessed as a result of the Proposed Development, are likely to be significant. Significant landscape and visual effects will be highlighted in **bold** in the text and in most cases, relate to all those effects that result in a '**Major**' effect as indicated in **Table 6-3**. Some '**Moderate**' levels of effect also have the potential, subject to the assessor's professional opinion, to be considered as significant and these exceptions are also highlighted in **bold** and explained as part of the assessment, where they occur. In accordance with the overall significance matrix in **Table 6-3**, those less than moderate are determined as '**not significant'**.

6.7.15 The type of effect will also be described and may be direct or indirect; temporary or permanent (reversible); and beneficial, neutral, or adverse.

Table 6-3: Evaluation of Landscape and Visual Effects

RECEPTOR SENSITIVITY	MAGNITUDE OF CHANGE			
	High	Medium	Low	Negligible
High	**Major**	**Major or Moderate**	**Moderate**	Minor or Negligible
Medium	**Major or Moderate**	**Moderate**	**Moderate** or Minor	Negligible
Low	**Moderate**	**Moderate** or Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Assessment of Cumulative Effects

6.7.16 The assessment of cumulative effects is essentially the same as for the assessment of the 'solus' landscape and visual effects, in that the level of landscape and visual effect is determined by assessing the sensitivity of the landscape or visual receptor and the magnitude of change. Cumulative assessment however considers the magnitude of change posed by multiple developments.

6.7.17 Cumulative LVIA (CLVIA) assesses the following types of cumulative effects:

- Cumulative landscape effects: where more than one development may have an effect on a particular area of landscape character or landscape designation; and
- Cumulative visual effects: the cumulative or incremental visibility of developments that may combine to have a cumulative visual effect. These can be further defined as follows:
  - Simultaneous or combined: where two or more developments may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view and without requiring them to turn their head;
  - Successive or repetitive: where two or more developments may be viewed from a single viewpoint successively as the viewer turns through 360°; and
  - Sequential: where a number of developments may be viewed sequentially or repeatedly at increased frequency, from a range of locations when travelling along a route within the study area.

6.7.18 CLVIA will adopt the same study area as the LVIA. The developments identified as having the potential for cumulative effects are:

- 2025/00493/RG3: Sully to Cosmeston ATR, Works for a shared pedestrian and cycle route (ATR), earthworks, landscaping and associated works from Sully to Cosmeston.
- 2020/01170/OUT: Land at Upper Cosmeston Farm, Lavernock Road, Penarth; Outline application for residential development, a primary school, community space and public open space with all matters reserved other than access.
- 2022/01113/RG3: Land at Lower Cosmeston Farm, Lavernock; Proposed new specialised school and associated access, landscape, and engineering works.

6.7.19 The Sully to Cosmeston ATR (2025/00493/RG3) is not likely to materially alter how the landscape is experienced within the study area so is not likely to give rise to cumulative landscape or visual effects with the Proposed Development. The introduction of new users to the landscape will be considered by their inclusion as Future Visual Receptors in the LVIA.

6.7.20 The specialised school (2022/01113/RG3) is already under construction so is likely to be present already in the landscape when construction of the Proposed Development begins, should permission be granted. Therefore, this will form part of the existing baseline and would not give rise to cumulative landscape or visual effects with the Proposed Development.

6.7.21 The only scheme with the potential for cumulative effects is the residential development at Land at Upper Cosmeston Farm (2020/01170/OUT). This has the potential to alter the way in which the landscape character is perceived and so in turn could alter the way in which the Proposed Development is experienced within that character, potentially leading to cumulative effects. Therefore, a cumulative assessment of the effects on Landscape Character will be included. The introduction of new residents to the landscape will be considered by their inclusion as Future Visual Receptors in the LVIA.

6.7.22 Desktop analysis, together with field observations, established that whilst opportunities for glimpsed views of the residential development to the north-east may exist there will be no opportunity for substantive combined, successive or sequential views of the approved (outline) residential development together with the Proposed Development where significant cumulative effects are likely to arise. Therefore, no cumulative visual assessment will be included.

6.7.23 The CLVIA considers the extent to which the Proposed Development, in combination with other proposed development may change landscape character through either an 'additional' or 'in combination' effect on characteristic elements, landscape characteristics and quality of the baseline landscape character as defined in LANDMAP. Identified cumulative landscape effects are described in relation to each individual scoped in LANDMAP Aspect Area assessed within the LVIA Study Area.

6.7.24 The magnitude of cumulative change to landscape character is dependent on several factors, including:

- The cumulative baseline, i.e., the presence, appearance, and interrelationship of existing, consented and submitted developments, and the degree to which these influence landscape character.
- The geographical extent covered by the cumulative landscape effects that have been identified.
- Whether effects are direct or indirect.
- The distance of the Proposed Development from the Aspect Area under consideration, and from other developments that form the cumulative baseline, which may also affect the Aspect Area in question.
- The duration, nature, permanence, and extent of the effect in physical and visual terms.
- The value attached to the landscape in question, including any designations.

6.8 Limitations and Assumptions

6.8.1 To ensure transparency within the EIA process, the following limitations and assumptions have been identified:

- Landscape and visual elements are dynamic and subject to change both seasonally and over time. Consequently, the landscape and visual baseline used for assessment may be subject to change over the timescale of a project. Assumptions on the nature and scale of change have to be made which are subject to a degree of error.
- ZTV mapping is based on DSM LIDAR, which takes account of topography and surface features such as vegetation and buildings in defining potential visibility. Field work will also be undertaken to validate and assess actual extent of visibility from specific viewpoint locations within the ZTV.
- Assessment is undertaken from publicly assessable locations, other than where arrangements can be made with landowners. Assumptions have to be made about the visual impact experienced from adjacent residential properties.
- Viewpoint photos will be presented as Type 1 Annotated Photographs.

6.9 Questions for LPA

- Is the proposed LVIA methodology acceptable?
- Is the proposed 1km Study Area acceptable to capture all potential significant effects?
- Are the proposed viewpoint locations acceptable to represent visual receptors identified within the Study Area, particularly those that are most sensitive and/or most susceptible to change?
- Do you agree the proposed scope of assessment is proportionate?
- Have all receptors that have the potential to experience significant effects as a result of the Proposed Development been scoped into the LVIA? If not, please specify any others that need to be included.

7. Biodiversity

7.1 Introduction

7.1.1 This section outlines the rationale for scoping of biodiversity impacts into the EIA for the Proposed Development. It also provides a preliminary assessment of the likely significant effects (LSE) predicted to arise from the Proposed Development upon ecology and the potential Zone of Influence (ZoI) for these effects. Ecological receptors considered include protected and notable species, habitats and designated sites.

7.2 Consultation

7.2.1 A response to a request for statutory pre-application advice was received from the Council dated 11th March 2026 (Ref: P/DC/2025/00095/EPA). As part of this engagement, WSP held a virtual meeting with the Council's ecologist to discuss the likelihood of the Proposed Development having a significant environmental effect on ecological receptors and to agree the required scope of survey effort. Further details of this consultation are reported in **Table 7-1**.

Table 7-1: Consultation Undertaken to Date

Body / Organisation	Date of Consultation	Key Outcomes of Discussion
County ecologist	11 March 2026	The Council's ecologist agreed with the proposed approach in identifying potential ecological receptors across the Site, and the proposed survey effort, as summarised in **Appendix G**. The following items were discussed: • Consideration should be given to the enhancement of grassland habitats beneath the solar panels for foraging raptor species. • The proposed quantitative approach to assessing the number of skylark nesting territories was agreed as a suitable method, but it was encouraged that any compensatory measures would be needed to deliver net benefit for biodiversity. • Engagement with NRW should be undertaken regarding the proposed ornithology survey effort. • Consideration should be given to fence design during construction, to include ample space for hedgehog *Erinaceus europaeus* (and other species) to move freely beneath them. • Consideration should be given to surveying for threatened arable plants. • Engagement with invertebrate county recorders should be sought through South-East Wales Biological Records Centre (SEWBReC) to determine if un-published records of carrot-mining bee *Andrena nitidiuscula* exist within the desk study area and what appropriate enhancements could be made for the species.

Body / Organisation	Date of Consultation	Key Outcomes of Discussion
		• Slow worm *Anguis fragilis* should be assumed present therefore, a suitable mitigation strategy should be prepared inclusive of compensatory measures. • Agreement in scoping out the following species surveys, due to their likely absence (not suitable habitat) or lack of potential impact pathways based on current design: breeding bird survey, dormouse survey, otter survey.

7.3 Study Area

7.3.1 The Study Area is defined by the ecological ZoI for the Proposed Development. The ZoI is the area over which the changes arising from the Proposed Development could lead to ecologically significant changes to the environment. The potential ZoI will vary between different ecological features.

7.3.2 For the purposes of this EIA Scoping Report, a precautionary ZoI has been used to identify potentially sensitive receptors/Important Ecological Features considered, based on the Proposed Development Area, as set out in **Table 7-2**.

Table 7-2: Potentially Sensitive Receptors / Important Ecological Feature and Study Area

Receptor	Study Area
Internationally important designated nature conservation sites, including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites.	10km
Nationally important designated nature conservation sites, including National Nature Reserves (NNR) and Sites of Special Scientific Interest (SSSI).	2km
Locally important designated nature conservation sites (Local Nature Reserves (LNR), Sites of Importance for Nature Conservation (SINC), Local Wildlife Sites (LWS)), and locally important non-statutory sites (e.g. B-Lines).	100m
Habitat of Principal Importance; protected and notable species29.	100m

7.4 Baseline Conditions

Preliminary Ecological Appraisal

7.4.1 In February 2025, a Preliminary Ecological Appraisal (PEA) was conducted which focused on the identification of habitats within the overall Site Boundary (see **Appendix D**).

29 *Formerly Priority Habitats. As identified by the Secretary of State in response to the requirements of Section 7 of the Environment (Wales) Act 2016*

7.4.2 The PEA comprised both a desktop study and a site visit to determine the habitats present within the survey area, including:

- Daytime Bat Walkover (DBW) methods to determine the suitability of features for bats;
- the potential of the habitats present to support other protected and notable species; and
- to provide recommendations for avoiding, minimising, or mitigating potential ecological impacts.

Desk Study

7.4.3 The Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), RAMSAR and Site of Special Scientific Interest (SSSI) is located immediately east of the Site.

7.4.4 There are four SSSI's located within 2km of the Site; the Penarth Coast SSSI located adjacent to the south-eastern boundary of the Site, Llynnoedd Cosmeston / Cosmeston Lakes SSSI located approximately 125m to the north, Sully Island SSSI located 600m to the south, and Cog Moors SSSI located 1.2km to the north-west.

7.4.5 The Cosmeston Lakes Country Park Local Nature Reserve (LNR) is located to the north of the Site. The Lavernock Point Nature Reserve sits adjacent to the south-eastern boundary of the Site, two-thirds of the nature reserve overlaps with the Penarth Coast SSSI.

7.4.6 There are two Sites of Importance for Nature Conservation (SINC) located within the Site boundary, Lavernock Point East and Ty-r-Orsaf. The Site also falls within the boundary of a B-Lines area (a non-statutory designated site). B-Lines are a series of 'insect pathways' which have been established by Buglife and act as a restorative series of wildflower rich-habitat stepping stones, linking existing wildlife areas together for bees and butterflies.

7.4.7 Records of protected and notable species were returned within 2km of the Site boundary during the desk study, including:

- multiple bat species;
- dormouse *Muscardinus avellanarius*;
- otter *Lutra lutra*;
- water vole *Arvicola amphibius*;
- various bird species;
- all four widespread amphibian species;
- great crested newt *Triturus cristatus*;
- slow worm *Anguis fragilis*;
- a single record of pond terrapin *Trachemys scripta*, an introduced species;

- various invertebrate species; and
- various Introduced Non-Native Species (INNS) plant species including Japanese knotweed *Fallopia japonica*, Butterfly-bush *Buddleja davidii* and cherry laurel *Prunus laurocerasus*.

Field Surveys

7.4.8 The DBW (completed in February 2025) identified 19 trees within the Site Boundary that could potentially support roosting bats, and the Site was given a moderate suitability rating for foraging and commuting bat activity.

7.4.9 Site habitats with potential to support other protected and notable species were assessed and suitable habitat for the following species was considered present: badger Meles meles and (with prints also found outside, but close to the Site), dormouse, bats, hedgehog, reptiles, invertebrates and birds.

7.4.10 The habitat survey (part of the PEA conducted in February 2025) was undertaken using standard Phase 1 Habitat Survey Methodology as defined by the Joint Nature Conservation Committee (JNCC). The survey identified that fields within the Site Boundary are mainly comprised of arable cultivated/disturbed land, with some areas of improved grassland and neutral grassland. The survey also identified parcels of semi-natural mixed woodland, scattered mature and semi-mature trees with scattered scrub at the bases of trees and pockets of continuous scrub. There were a mix of intact species-poor hedgerows and species poor hedgerows with trees across the Site. Two ponds were also recorded in the Site Boundary.

7.4.11 The hedgerows and semi natural mixed woodland were considered to qualify as Habitats of Principle Importance under 'hedgerow' and 'lowland mixed deciduous woodland' JNNC criteria, respectively.

7.4.12 A series of additional species-specific surveys were also completed following the PEA, including:

- Bat activity surveys; comprising static detector deployment and night-time bat walkovers (NBW), in Spring, Summer and Autumn 2025;
- Aerial (close) inspection survey of trees comprising up to three visits between June to December 2025; and
- Wintering bird survey, comprising monthly visits from November 2025 to March 2026.

7.4.13 The results of the bat activity surveys are undergoing analysis at the time of writing this EIA Scoping Report and a precautionary approach in relation to bat activity has therefore been applied within this section. Full results and analysis will be included in the ES.

7.4.14 The aerial (close) inspection survey of trees was carried out in accordance with the Bat Conservation Trust (BCT) best practice[30] guidelines to allow an accurate assessment of Potential Roosting Features (PRF) present and search for evidence of use by bats. The surveys identified:

- Five trees with a roost suitability rating of PRF-M[31] (shown as the orange and yellow dots in **Figure 7 (Appendix A)**) and
- Nine trees with a roost suitability rating of PRF-I[32] (shown as the green dots in **Figure 7 (Appendix A)**).

7.4.15 The wintering bird survey was based on methods provided by the Bird Survey & Assessment Steering Group for a non-breeding walkover survey on the Bird Survey Guidelines website[33].

7.4.16 The surveys identified 27 species across the Site, including the following notable species:

- Species listed under Schedule 1 of the Wildlife and Countryside Act 1981: snipe *Gallinago gallinago* and redwing *Turdus iliacus*;
- Species of principal importance as listed under Section 7 of the Environment (Wales) Act 2016: skylark *Alauda arvensis*, meadow pipit *Anthus pratensis*, dunnock *Prunella modularis*, goldcrest *Regulus regulus* and mistle thrush *Turdus viscivorus*.

7.4.17 In consultation with the County ecologist, it was agreed that a quantitative approach to assessing the number of skylark nesting territories would be applied as an addition to the wintering bird surveys. Skylark territory presence were estimated using data collected of the species observed performing early season song-flights above territories, during February and March, in line with research that documents this seasonal behaviour[34]. The number of territories across the Site were estimated by comparing field data with published established density benchmarks[35] for suitable habitat present on Site.

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[30] Collins, J. (ed), 2023. Bat surveys for professional ecologists; good practice guidelines. 4th edition. London: Bat Conservation Trust.

[31] PRF-M: A potential roosting feature which could support multiple bats and may therefore be used by a maternity colony.

[32] PRF-I: a potential roosting feature only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitat.

[33] Bird Survey & Assessment Steering Group (n.d.) Non-breeding walkover survey guidelines. Bird Survey Guidelines. Available at: https://birdsurveyguidelines.org/non-breeding-walkover-survey/ (Accessed: April 2026)

[34] Donald, P.F. & Vickery, J.A. (2000). The importance of cereal fields to breeding and wintering Skylarks Alauda a rvensis in the UK. Ecology and Conservation of Lowland Farmland Birds, p140-150.

[35] Browne, S., Vickery, J.A. & Chamberlain, D.E. (2000). Densities and population estimates of breeding Skylarks *Alauda arvensis* in Britain in 1997. Bird Study 47: 65.

7.4.18 Based on the baseline reporting and initial walkover, the following protected or otherwise notable species are considered likely to be present within the potential ZoI of the Proposed Development:

- Roosting, commuting, and foraging bats;
- Badgers;
- Dormouse;
- Hedgehog;
- All breeding birds;
- All wintering birds;
- Widespread reptile species (common lizard *Zootoca vivipara*, adder *Vipera berus*, grass snake *Natrix natrix* and slow worm;
- Terrestrial phase widespread amphibian species (common frog *Rana tempora*, common toad *Bufo bufo*; palmate newt *Lissotriton helveticus* and smooth newt *Lissotriton vulgaris*), however, excluding great crested newt;
- Protected and notable invertebrate species, including 26 species listed as Species of Principal Importance under Schedule 7 of the Environment (Wales) Act 2016; and
- Threatened arable plants.

Future Surveys and / or assessments to be conducted

7.4.19 A comprehensive botanical survey is planned for the Proposed Development Area in June 2026 which is the optimal botanical survey window. This will determine the presence/likely absence of threatened arable plants, other protected or notable plant species, significant plant species assemblages and plants that could support larval stages of protected or notable invertebrate species such as the carrot-mining bee or Lepidoptera noted for action in the Vale Nature Recovery Action Plan[36]. This includes chalk carpet *Scotopteryx bipunctaria*, figure of eight *Diloba caeruleocephala*, greenweed flatbody *Agonopterix atomella* and narrow-bordered bee moth *Hemaris tityus*.

7.4.20 A report to inform a Habitats Regulations Assessment will also be prepared, to enable the Competent Authority to carry out an Appropriate Assessment, separately to the EIA process.

[36] Vale Nature Partnership, (no date). Nature Recovery Action Plan. Available online at: Nature Recovery Action Plan | Vale Nature

7.5 Mitigation: Minimising Harm to Biodiversity

7.5.1 The information from the PEA and subsequently commissioned surveys has been used to inform the infrastructure design within the Proposed Development Area, with care being taken to minimise impacts on areas of the highest ecological value. A summary of the design process and how the ecological data has supported the process is presented in **Section 2.2**.

7.5.2 The following primary mitigation in relation to biodiversity has been secured as part of the design evolution of the Proposed Development:

- Avoidance of development within international, national and locally designated sites of nature conservation.
- Avoidance of direct impacts on habitats of high ecological value, including all woodland, scrub and scattered trees.
- Existing hedgerows and field boundaries on-site will be retained and protected throughout the Proposed Development where possible, with existing field access points used to avoid unnecessary removal or severance of hedgerows. Some existing access points may need to be widened (to allow for machinery / plant access during construction only), however these will be kept to the minimum and any habitat loss is limited to fringe habitats and temporary loss.

7.5.3 Any other mitigation measures (secondary or tertiary mitigation) for important ecological features will be outlined within the ES chapter, and subject to the results of future baseline surveys and design progression. These may include specific measures to protect ecological features during implementation of the Proposed Development, for example, specific management of habitats to address the impacts of the Proposed Development and/or deliver ecological enhancement. This could also include (for example, subject to appraisal of the impacts of the final design of the Proposed Development), standard best practice measures in relation to precautionary method of working for biodiversity and measures to protect ecological features retained within and adjacent to the Proposed Development.

7.5.4 Relevant planning conditions are a further mechanism by which mitigation measures can be secured. Where impacts are unavoidable, the need for appropriate planning conditions will be detailed within the ES e.g. the requirement for an Outline CEMP and LEMP.

7.6 Description of Likely Significant Effects

7.6.1 The ES will report on the likely significant ecological effects for the construction, operational (including maintenance) and decommissioning phases of the Proposed Development.

Elements Scoped In of Further Assessment

7.6.2 The potential significant effects and ecological receptors scoped in and out of the assessment are summarised in **Table 7-3**.

Table 7-3: Potential Significant Effects and Ecological Receptors Scoped into the Assessment

Potential Significant Effect	Scoped In	Scoped Out	Ecological Receptors and Justification
Alteration or degradation of habitats on-site which may be used by protected species populations associated with internationally and nationally designated nature conservation sites during construction and decommissioning.	✓		Internationally designated sites within 10km, and any underpinning nationally designated sites; Severn Estuary SAC / SPA. In accordance with VGC from the EIA screening response[37], it was advised that a Habitats Regulations Assessment would be expected.
Alteration or degradation of habitats or protected species populations associated with locally important nature conservation sites during construction and decommissioning.	✓		Non statutory designed sites within 100m: B-Line: Lavernock Point Wildlife Trust Reserve WTR, Lavernock Point East SINC, Ty-r-Orsaf SINC. Potential impact pathways include increased risk of dust, sediment transport, and water-borne pollutants. Risks of pollution events would be greatest during construction and decommissioning but would still be relatively limited given the nature of the Proposed Development.
Direct mortality of protected and / or notable species, and loss of their habitats during construction and decommissioning.	✓		Construction will primarily result in the loss of arable habitats in the Proposed Development Area, with all habitats of high ecological value including woodland, scattered trees and hedgerows being retained as far as possible. Ecological surveys have identified the presence of, or potential for the following protected and / or notable species to be present within areas of habitat loss, and these species are scoped in for further assessment: bats, breeding skylark, hedgehog, widespread reptile species, widespread amphibian species in their terrestrial stage (excluding great crested newt), protected and / or notable invertebrate species and threatened arable plants.

[37] VoGC 2025 EIA Screening Opinion Response. Application number: 2025/00095/EPA.

Potential Significant Effect	Scoped In	Scoped Out	Ecological Receptors and Justification
Disturbance of protected and / or notable species during construction and decommissioning.	✓		Construction will primarily result in the loss of arable habitats in the Proposed Development Area, with all habitats of high ecological value including woodland, scattered trees and hedgerows being retained as far as possible. Ecological surveys have identified the presence of, or potential for the following protected and / or notable species to be present within areas of habitat loss, and these species are scoped in for further assessment: bats, breeding skylark, hedgehog, widespread reptile species, widespread amphibian species in their terrestrial stage (excluding great crested newt), protected and / or notable invertebrate species and threatened arable plants. Potential impact pathways include increase in noise and visual disturbance during construction and decommission.
Disturbance of protected and/or notable species and loss of their habitats (badger, dormouse, breeding birds (excluding skylark) and notable wintering birds).		✓	Woodland, scattered trees and hedgerows, which may support these species (badger, dormouse, breeding birds (excluding skylark)) will be retained as far as possible and therefore no potential impact pathways are envisaged, and the species are scoped out. Surveys have identified the Site as being of no more than local value for notable wintering birds. Therefore, no potential significant effects are anticipated, and wintering birds are scoped out.
Loss or alteration/degradation of Habitats of Principal Importance.		✓	The proposals would entail some temporary land take (during construction) and permanent land take (operation) within the Proposed Development boundary, but habitats to be removed are expected to be of limited nature conservation importance, with features of greatest interest retained. Habitats of Principal Importance will be retained. Therefore, these have been scoped out of the assessment.

Potential Significant Effect	Scoped In	Scoped Out	Ecological Receptors and Justification
All potential environmental effects during operation.		✓	Following construction, the operational activities would be limited to minor maintenance works confined to regular inspections, cleaning of solar PV modules, repair and replacement of components, and water and vegetation management. Therefore, the Proposed Development would not involve operational activities that could significantly affect designated sites, habitats and protected or notable species. Furthermore, existing hedgerows and field boundaries will be retained and protected where possible and an Outline LEMP will set out the principles for how the land will be managed throughout the operational phase to protect ecological features retained within and adjacent to the Proposed Development. Given the limited operational activities and implementation of embedded mitigation and habitat management measures, significant adverse effects on ecology are not considered likely during operation and will be scoped out.
Effects on common and widespread habitats and species, including: • temporary disturbance of common and widespread species of negligible nature conservation importance such as rabbits; and • loss or alteration/degradation of common and widespread habitats of negligible nature conservation importance.		✓	Effects on common and widespread habitats and species will not be considered as they do not meet the criteria for requiring full EcIA identified in the CIEEM Guidelines; and are therefore not considered to be a material consideration for decision-making.

Potential Significant Effect	Scoped In	Scoped Out	Ecological Receptors and Justification
Cumulative effects	✓		The Proposed Development is in an area with several other plans and projects which have either come forward or are expected to come forward, including the development of the land at Lower Cosmeston Farm in terms of cumulative effects on biodiversity highlighted by the Council (skylark). There is potential for non-significant effects arising from the Proposed Development alone to combine with those from other plans and projects, during the construction phase.

7.7 Opportunities for Enhancing the Environment

7.7.1 The Welsh Government has produced an advice note on delivering biodiversity enhancements[38], which is now secured in Welsh planning policy through Edition 12 of Planning Policy Wales (PPW)[39]. This includes an approach to delivering Net Benefit for Biodiversity (NBB) in Wales, with the onus being placed on demonstrating both a measurable NBB and promoting ecosystem resilience.

7.7.2 The Proposed Development's accompanying Green Infrastructure Statement will set out how NBB will be achieved.

7.7.3 Following industry best practice guidance, opportunities to deliver ecological enhancements will be considered for inclusion within the Proposed Development. Any such enhancements would be designed to support locally important habitats and species, and to strengthen and extend existing ecological networks. Opportunities to deliver multi-functional enhancements would be considered, for example opportunities for habitat enhancements for foraging bats and raptors may also provide opportunities to reduce flood risk through slowing overland flows via increased variation in vegetation structure.

7.7.4 The Proposed Development Area has been sensitively designed to minimise potential effects on the important ecological features identified during surveys and retains all but minor fringe habitats. The retention of existing hedgerows and habitats provides further opportunities for enhancing habitats for the following:

- Roosting, commuting and foraging bats, through enhancement of open grassland, borders, hedgerows and provision of bat boxes.

[38] Welsh Government, (2022). *Section 6 biodiversity and resilience of ecosystems duty: summary report 2022*. Available online at: https://www.gov.wales/sites/default/files/pdf-versions/2022/12/4/1672307032/section-6-biodiversity-and-resilience-ecosystems-duty-summary-report-2022.pdf [Accessed: March 2025].

[39] Welsh Government, (2024). *Planning Policy Wales, Edition 12*. Available online at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed: March 2025].

- Foraging raptors, through enhancement of retained arable grassland to the east and within the 10m retained buffer around the Proposed Development Area.
- Hedgerow nesting birds, through supplementary planting of hedgerow and a sensitive cutting regime.
- Ground nesting birds, slow worm and other widespread reptiles and terrestrial phase widespread amphibians through enhancement of retained arable grassland to the east and within the 10m retained buffer around the Proposed Development Area.

7.7.5 Through these measures, the proposal will retain and improve habitat and landscape connectivity across the Proposed Development Area.

7.8 Proposed Assessment Methodology

Relevant Legislation and Guidelines

7.8.1 The ecological assessment will consider the following legislation, policy and guidance:

Legislation:

- The Conservation of Habitats and Species Regulations 2017;
- Wildlife and Countryside Act 1981 (as amended);
- Natural Environment and Rural Communities Act 2006;
- The Protection of Badgers Act 1992; and
- Environment (Wales) Act 2016.

Policy:

- Future Wales: The National Plan 2040;
- Planning Policy Wales;
- Technical Advice Note (TAN) 5: Nature Conservation and Planning; and
- Vale of Glamorgan Local planning policy - Local Development Plan (LDP) 2011-2026 or its successor (Vale of Glamorgan Replacement LDP currently in progress).

Other relevant guidance:

- BRE (2014) National Solar Centre Biodiversity Guidance for Solar Developments.

Assessment of Effects Methodology

7.8.2 The EIA will include a comprehensive assessment that collates relevant baseline information to predict the effects of the Proposed Development on Important Ecological Features. The assessment will determine the potential effects arising from the construction, operation and decommissioning phases of the Proposed Development on Important Ecological Features, both with and without consideration of secondary (further) mitigation measures.

7.8.3 This section sets out the methodology that will be followed to assess the potential ecological impacts of the Proposed Development, considering all phases (construction, operation and decommissioning). The construction phase includes enabling works, clearance, earthworks and construction activities.

7.8.4 Assessment methods for all potentially significant effects will be based on the methodology described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK (2018), updated September 2024[40].

7.8.5 The methodology for this assessment follows the key stages listed below:

- establishing the Study Area and Survey Area;
- collating information on baseline studies of ecological receptors;
- identification of Important Ecological Features (IEFs);
- identification and characterisation of potential impacts;
- identification and assessment of significant effects from potential impacts upon IEFs; and
- identification and assessment of residual effects.

Source-pathway-receptor approach

7.8.6 The source-pathway-receptor approach will be used to understand the mechanisms by which the Proposed Development could result in significant effects on ecological resources. The approach starts by identifying potential sources of effects (i.e. impacts), defining the ZoI over which that impact could have a material effect, and then mapping the progression of the impact along potential pathways to the ecological resources being assessed.

Important Ecological Features

7.8.7 The value of sites, species and habitats will be evaluated in line with CIEEM guidelines with reference to their importance in terms of conservation value (which relates to the need to conserve representative areas of different habitats and the generic diversity of species populations); and their legal status. For the purposes of this assessment, sites, species populations, species assemblages and habitats will be valued using the following geographical scale:

- International;
- National (UK or Wales);
- County;
- Local;

[40] CIEEM, (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester

- Of value within the context of the project; and
- Negligible.

7.8.8 Guidelines on ecological impact assessment note the difficulty of devising valuation criteria that can be consistently applied to designated sites, species and habitats in the same way in all parts of the country. It recommends an approach to valuation that involves teasing apart the different values that can be attached to the ecological features under consideration. However, it is beneficial to give examples of the sorts of criteria used in the valuation process, and these are summarised in **Table 7-4**.

Table 7-4: Examples of Criteria used to Evaluate Important Ecological Receptors

Level of Value	Definition
International	An internationally important site, e.g. SPA, SAC, or Ramsar site (or a site considered worthy of such designation); a regularly occurring population of an internationally important species (listed on the Conservation of Habitats and Species Regulations 2017; 1% of the known international population of a particular species.
National/UK or National/Wales.	A nationally designated site, e.g. SSSI, NNR), or a site considered worthy of such designation, any regularly occurring population of a nationally important species, e.g. listed on Schedules 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); a feature identified to be a priority habitat or species under Section 7 of the Environment (Wales) Act 2016[41], 1% of the known UK population of a particular species.
County	Areas of internationally or nationally important habitats which are degraded but are considered readily restorable; viable areas of key habitat identified in Local Biodiversity Action Plans (LBAPs), or smaller areas of such habitat which are essential to maintain the viability of a larger whole, a site designated as a Wildlife Site or a SINC, a regularly occurring, locally significant number of a nationally important species; 1% of the known population of a particular species within the county.
Local	Designated sites including LNR, SINCs and LWS designated in the local context. Trees that are protected by Tree Preservation Orders (TPOs) and areas of habitat that are considered to enrich the habitat resource in the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.
Negligible	No intrinsic natural conservation value associated with the habitat. Generally, these are areas of hardstanding or buildings.

7.8.9 It is impractical and inappropriate for an assessment of the ecological effects of a development to consider every species and habitat that may be affected. Instead, it focuses on IEFs which are the species and habitats present within the ZoI of the Proposed Development that are of sufficiently high value that certain impacts upon them, as a result of the Proposed Development, could result in a significant effect.

[41] Welsh Government. (2016). Environment (Wales) Act 2016. Available at: https://www.legislation.gov.uk/anaw/2016/3/contents

7.8.10 The description and valuation of ecological features will consider any likely changes including, for example:

- trends in the population size or distribution of species;
- likely changes to the extent of habitats; and
- the effects of other proposed developments or land-use changes.

7.8.11 Due consideration will be given to non-important ecological features (i.e. those nature conservation sites, species and habitats below local importance) throughout the construction and operation period, with regard to legislative protection.

Identification and characterisation of Potential Impacts

7.8.12 Ecological receptors are usually non-statutory designation sites/ nature conservation sites, habitats, species assemblages or communities, or populations or groups of a species. Impacts can be permanent or temporary, direct or indirect, and can be cumulative. These factors are brought together to assess the magnitude of the impact on IEFs and, wherever possible, the magnitude of the impact is quantified. Professional judgement is then used to assign the impacts on the IEFs to one of four classes of magnitude, defined in **Table 6-5**.

Table 6-5: Magnitude of Potential Impacts

Magnitude	Definition
High	A permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	A permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group. A short-term effect that will adversely affect the integrity of a receptor in a permanent manner. If there are adverse negative effects, this is unlikely to threaten overall sustainability, if positive effects, this is likely to be sustainable but is unlikely to significantly enhance its conservation status.
Low	A permanent or temporary, long-term reversible or short-term effect on a site, habitat, species assemblage or community, population or group whose magnitude is detectable but will not threaten/change its conservation status.
Negligible	A short-term reversible effect on the extent, size or integrity of a site, habitat, species assemblage or community, population or group that is within the normal range of natural variation and has no discernible lasting effect.

7.8.13 Potential impacts are characterised initially in the absence of any mitigation, except where this is integral to the design of the Proposed Development (embedded mitigation).

Defining significance of effect

7.8.14 The significance of the predicted effects on receptors arising from the identified impacts of the Proposed Development is assessed. Effects (which can be either beneficial or adverse) is assessed as Significant or Not Significant based on the integrity and/or the conservation status of an IEF within a given geographical area.

7.8.15 In considering the integrity and conservation status of the receptor, the key considerations are:

- Will any site/ecosystem processes be removed or changed or subject to disturbance?
- What will be the effect on the nature, extent, structure and function of component habitats?
- What will be the effect on the average population size and viability of component species?
- In determining the significance of a potential effect, the above factors including the value of the feature, magnitude of the potential impact, spatial extent of the impact and the duration of the impact are considered.

7.8.16 Where possible, the assessment of these parameters needs to be expressed quantitatively and to be based on research and published information. However, it is also recognised that many ecological effects are complex, therefore professional and qualitative judgements are often required to prescribe the significance of the effect.

Source-pathway-receptor approach

7.8.17 The source-pathway-receptor approach will be used to understand the mechanisms by which the Proposed Development could result in significant effects on ecological resources. The approach starts by identifying potential sources of effects (i.e. impacts), defining the ZoI over which that impact could have a material effect, and then mapping the progression of the impact along potential pathways to the ecological resources being assessed.

7.9 Limitations and Assumptions

7.9.1 To ensure transparency within the EIA process, the following limitations and assumptions have been identified:

- Completion of some ecology surveys remain outstanding, and subject to the results, coupled with review of design progress, may lead to the requirement for additional surveys. A precautionary approach has been taken to scoping in or out, of these receptors at this stage.

- Assessment of cumulative effects will be dependent on available information relating to other relevant plans and projects. Where such information is limited, this may in turn limit the efficacy of the assessment of cumulative effects.

7.10 Questions for LPA

- Do you agree with the proposed study areas?
- Do you agree with the receptors that are proposed to be scoped in or out of the assessment?
- Are there any receptors not identified that you would like to see included in the EIA?

8. Noise and Vibration

8.1 Introduction

8.1.1 This section outlines the rationale for scoping noise and vibration impacts into the EIA for the Proposed Development. It describes the methodology to be used within the assessment and identifies potential noise and vibration impacts to nearby sensitive receptors from the construction, operation, and decommissioning of the Proposed Development.

8.1.2 The ES will report on the potential effects of the Proposed Development to the nearby Noise Sensitive Receptors (NSRs) during the construction, operational, and decommissioning stages, and appropriate mitigation measures will be specified where necessary to avoid significant adverse effects.

8.2 Consultation

Pre-Application Advice and Screening Opinion

8.2.1 **Table 8-1** summarises relevant comments received from the Council within the response to a Pre-Application Request and EIA Screening Direction, and how they will be addressed as part of the EIA.

Table 8-1: Council Comments with regards to noise and vibration

Consultee	Document	Comments relevant to the Noise Environment	Response
VGC	P/DC/2025/00095/EPA	Policies MD2 and MD19 of the LDP both refer to the requirement of development to safeguard residential amenity. This is supported by the criteria-based Policy MD7 which states that development proposals will be required to demonstrate they will not result in an unacceptable impact on people and residential amenity from "*Noise, vibration, odour nuisance and light pollution*"	A noise and vibration assessment to determine any potential significant effects to dwellings during the construction, operation and decommissioning phase will be scoped into the EIA. Assessment of operational vibration impact is proposed to be scoped out of the EIA as there will be no rotating equipment or other sources of operational vibration forming part of the Proposed Development having the potential to give rise to any significant effects at any location. This is discussed further in **Section 8.6**.

Consultee	Document	Comments relevant to the Noise Environment	Response
VGC	P/DC/2025/00095/EPA	"*Solar arrays themselves generally do not generate large amounts of noise or require significant lighting and so scope exists to mitigate potential nuisance through design and conditions. That said, supporting equipment such as transformers and battery storage facilities may result in noise pollution and vibration which in turn, can result in adverse impact upon residential amenity*"	Assessment of noise impact from the operation of ancillary equipment, including transformers and BESS, will be scoped into the EIA. Appropriate noise mitigation measures will be specified, where necessary, to avoid/mitigate significant effects to nearby NSRs. Assessment of operational vibration impact is proposed to be scoped out of the EIA. This is discussed further in **Section 8.6**.
VGC	P/DC/2025/00095/EPA	"*Details of any ancillary equipment will be required in any subsequent application, along with a Noise Survey and Noise Impact Assessment*"	Details of all plant and ancillary equipment will be provided in the ES. A baseline noise survey has been undertaken, using a methodology agreed with Council's Environmental Health Team. Further detail is provided in **Section 8.4**. Assessment of significant effects to dwellings during the construction, operation and decommissioning phase, when assessed in accordance with BS 4142:2014+A1:2019, will be scoped into the EIA.
VGC	P/DC/2025/00095/EPA	"*A Construction Environmental Management Plan would also be required to address potential* *sources of nuisance during construction.*"	Noise and vibration impact from construction activities to nearby NSRs will be scoped into the EIA, assessed in accordance with BS5228-1 and BS5228-2, and addressed in the Outline CEMP.

Consultee	Document	Comments relevant to the Noise Environment	Response
Shared Regulatory Services (Pollution)	P/DC/2025/01286/SC1	"*Shared Regulatory Services (Pollution) responded to advise that a full application should be accompanied by a Noise Survey, Noise Impact Assessment, and Construction Environmental Management Plan.*"	A baseline noise survey has already been conducted, using methodology as agreed with Council's Environmental Health Team. Further detail is provided in **Section 8.4**. A noise impact assessment is scoped into the EIA, and noise impact from construction activities will be addressed in the Outline CEMP.
VGC (LPA)	P/DC/2025/01286/SC1	"*There is potential for noise generation during operation, particularly from the ancillary equipment, which would need to be subject to further assessment, but is unlikely to create significant nuisance and there would be scope for mitigation.*"	Assessment of noise from ancillary equipment during the operational phase is scoped into the EIA.
VGC (LPA)	P/DC/2025/01286/SC1	"*Any impacts on sensitive receptors during construction would be temporary and could be mitigated through a Construction Environmental Management Plan and Construction Traffic Management Plan.*"	Assessment of likely significant effects from construction activity is scoped into the EIA and will be addressed in the Outline CEMP. Construction traffic is not anticipated to significantly increase road traffic levels on access routes to the Proposed Development. This is discussed further in **Section 8.6.**

Consultation with the Council on Noise Survey Methodology

8.2.2 Prior to undertaking a baseline noise survey in support of the EIA, the Environmental Health Team at the Council was contacted via email to discuss and agree the methodology for the noise survey. A subsequent meeting was arranged to discuss the proposals, and the noise survey methodology was confirmed to be suitable by the Council via email on 10th March 2025.

8.2.3 The outline methodology as agreed was as follows:

- To undertake unattended noise monitoring for approximately seven days at two Noise Measurement Locations (NMLs). The NMLs were selected to measure noise levels representative of the nearest residential receptors to the Proposed Development Area.
- NML1 was proposed at a location close to residential properties on Fort Road. Background noise levels measured at this location are representative of residential properties on Fort Road and Lavernock Road.
- NML2 was proposed at the northern boundary of The Bay Caravan Park, which is representative of residential properties located at this site.
- One weather monitor was proposed to be collocated with the noise monitor at NML2 to log weather conditions during the survey period.

8.2.4 Details of the baseline sound level survey are provided in **Section 8.4**.

8.3 Study Area

8.3.1 Study areas have been defined for each aspect of the Proposed Development requiring assessment. Determination of the extent of the study areas is based on appropriate guidance, where available, and professional judgement has been applied where there is a lack of specific guidance on the determination of study areas (e.g. there is no specific guidance on determination of study areas for construction or operational noise).

8.3.2 The closest sensitive receptors to proposed construction activities and operational plant, which fall within the respective study areas, will be the focus of the assessment. Where necessary, the study areas may be expanded, or additional receptors within the study area be considered, where sensitive receptors closer to the Proposed Development Area are found to be subject to likely significant effects due to noise or vibration.

8.3.3 The proposed study areas are set out in the list below.

- **Construction noise and vibration**: The study area for this aspect has been determined using professional judgement, experience of similar schemes and appropriate guidance as set out in **Section 8.8**. The study area is defined as an area approximately 300m from the Proposed Development Area. In accordance with the relevant guidance, if the assessments indicate likely significant effects, or if cumulative effects are considered likely based on any proposed parallel construction programmes from nearby developments, the study areas may be expanded to include other sensitive receptors close to the boundary of the study area.

- **Construction traffic noise**: It is proposed that assessment of construction traffic noise be scoped out of the assessment, therefore no study area for construction traffic noise is defined. **Section 5.12** details that construction traffic flows are not expected to significantly increase along the roads utilised to access the Proposed Development. Justification for elements being scoped in and out of assessment are provided in **Section 8.6**.
- **Construction traffic vibration**: It is proposed that assessment of groundborne vibration arising from construction traffic be scoped out of the assessment, therefore no study area for groundborne vibration arising from construction traffic is defined. Justification for elements being scoped in and out of assessment are provided in **Section 8.6**.
- **Operational noise**: The study area for this aspect has been determined using professional judgement and experience of similar schemes, as there is no relevant guidance setting out the spatial extents of study areas that should be considered when assessing operational noise. The study area has been defined as an area approximately 500m distance from the Proposed Development Area.
- **Operational vibration**: It is proposed that assessment of operational vibration be scoped out of the assessment, therefore no study area for operational vibration is defined. Justification for elements being scoped in and out of assessment are provided in **Section 8.6**.

8.4 Baseline Conditions

Receptors

8.4.1 A desktop study has been undertaken to identify the nearest NSRs. The data source used in the desktop study was aerial imagery accessed via Google Earth Pro42 and the Proposed Development Area.

8.4.2 The receptors identified in **Figure 8 (Appendix A)** and detailed in **Table 8-2** are the closest to the Proposed Development Area and are therefore those likely to have the greatest potential to experience significant effects during the construction and operation of the Proposed Development. As discussed above, additional receptor locations may be considered and/or the Study Area expanded to include other key receptor locations, where appropriate and necessary to do so.

42 Google (2026). Google Earth Pro Version 7.3.4.8248. (online) Available at: https://earth.google.com/web. (Accessed February 2026).

Table 8-2: Noise and Vibration Receptors

ID	Receptor	Type	Approximate coordinates (OSGB36 National Grid)	
			Easting, m	Northing, m
R01	The Bay Caravan Park	Residential	317567	168024
R02	The Vineyard, Lavernock Road	Residential	316891	168214
R03	Baruch, Fort Road	Residential	317780	168590
R04	70 Fort Road	Residential	317859	168565
R05	Sutton Farm, Fort Road	Residential	317943	168317
R06	Lavernock Point Holiday Estate	Residential	318233	168180
R07	Ysgol Llyn Derw	School	317864	168840

Baseline Sound Level Survey

8.4.3 A baseline sound level survey was undertaken between 6th – 13th March 2026 to quantify and characterise baseline noise conditions at the nearest NSRs to the Proposed Development Area.

8.4.4 Unattended long-term noise monitoring was undertaken at two locations (see NML1 and NML2 on **Figure 8 (Appendix A)**, and meteorological conditions were measured using a weather monitor collocated with one of the noise monitors. The survey was conducted with reference to BS 7445-1:2003, BS 7445-2:1991 and BS 4142:2014+A1:2019.

8.4.5 Weather conditions were suitable for noise monitoring during most of the survey period. Most of the monitoring period was dry with low wind speeds, however there were periods of rain on 11th and 13th March 2026. Monitoring periods adversely affected by periods of rain will be excluded from the analysis.

8.4.6 Noise monitoring results were typical of those expected in a rural setting. The survey results will be presented in a baseline sound level survey report.

8.5 Mitigation: Minimising Harm from Noise and Vibration

8.5.1 Where the assessment identifies likely significant effects, mitigation will be specified to reduce the effects such that they are not significant. Examples of the types of mitigation and Best Practicable Means (BPM) that could be applied, if required, are set out in **Table 8-3**.

Table 8-3: Examples of mitigation that may be applied should likely significant effects be identified

Element	Example of mitigation that could be applied, if necessary
Construction activity noise	Use alternative construction methods. Reduce intensity of construction works. Select quieter plant. Provide temporary noise barriers.
Construction activity vibration	Use alternative construction methods. Reduce intensity of construction works. Select plant with lower vibration emissions.
Operational noise	Specify alternative siting of intermediate plant between PV panels and on-site substation compound to avoid noise sensitive locations. Select quieter plant.

8.6 Description of Likely Significant Effects

Construction

8.6.1 Activities in the construction compound may generate noise emissions that could affect nearby receptors. Open cut trenching, upgrading existing tracks and construction of new access tracks within the Proposed Development Area can entail the generation of construction vibration, where the use of vibratory rollers is required. Piling activities may be a source of construction noise and vibration. All the above possible sources of construction noise and vibration have the potential to give rise to significant effects.

Operation

8.6.2 Solar farms do not typically emit high levels of operational noise; however, the Proposed Development includes low noise level plant items intermediate between the PV panels and the on-site substation compound (transformers, inverters). The new equipment required for the on-site substation compound (e.g. transformers, switchgear, etc.) and the equipment required for the BESS containers (HVAC) would also emit operational noise that could affect nearby receptors. The micro-siting of intermediate plant (i.e. transformers, inverters) between the PV panels and the on-site substation compound will be important to ensure that significant effects are avoided.

8.6.3 The intermediate plant items between the PV panels and the on-site substation compound, and the new equipment required for the on-site substation compound, will not result in any likely significant operational vibration emissions.

Decommissioning

8.6.4 The environmental effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works. Therefore, the likely significance of effects relating to the construction phase assessment will be applicable to the decommissioning phase. The assessment of decommissioning activities will be considered as part of the construction noise and vibration assessment.

Elements Scoped In or Out of Further Assessment

8.6.5 In summary, **Table 8-4** below sets out the elements to be scoped in and scoped out of further assessment.

Table 8-4: Elements Scoped In or Out of Further Assessment with regards to noise and vibration

Element	Phase	Scoped In	Scoped Out	Justification
Construction activity noise	*Construction / Decommissioning*	✔		There is currently insufficient information available to determine that noise from construction activities would not give rise to likely significant effects.
Construction activity vibration	*Construction / Decommissioning*	✔		There is currently insufficient information available to determine that vibration from construction activities would not give rise to likely significant effects.
Construction road traffic noise	*Construction*		✔	Construction road traffic noise is scoped out as significant effects are unlikely. As a guide it takes an increase of 25% in traffic flows to cause an increase in noise levels of 1 dB. The Design Manual for Roads and Bridges (DMRB) LA 111 (2020)[43] provides criteria for road traffic noise increases in the short term, with a threshold increase of +3.0 dB for a medium magnitude of impact. Based on **Section 5.12**, it is considered unlikely that construction traffic would give rise to a road traffic noise increase of +3.0 dB. Therefore, increases in road traffic noise levels are not expected to give rise to significant effects.

[43] Highways England (2020) Design Manual for Roads and Bridges, LA 111 Noise and Vibration, Version 2.0. Available online at: https://www.standardsforhighways.co.uk/tses/attachments/by-attachment-id/4b6c3ac3-c00d-41f2-8531-4744d1ed0a7c?inline=true (Accessed 13 May 2026).

Element	Phase	Scoped In	Scoped Out	Justification
Construction road traffic groundborne vibration	*Construction / Decommissioning*		✔	Groundborne vibration from road traffic is scoped out because there is no methodology available for predicting and assessing it. The relevant guidance document which sets out criteria for the assessment of airborne noise from road traffic (DMRB[44]) scopes out assessment of vehicle induced vibration (for new roads), on the basis that the road surface will be free from irregularities that would give rise to vehicle induced vibration. Irregularities in the road surface should be minimised through normal maintenance overseen by the Highway Authority.
Operational noise	*Operation*	✔		There is currently insufficient information available to determine that operational noise would not give rise to likely significant effects.
Operational vibration	*Operation*		✔	There is no rotating equipment or other sources of operational vibration forming part of the Proposed Development that would have the potential to give rise to any significant effects at any location. It is therefore proposed that assessment of operational vibration be scoped out of the assessment.
Cumulative effects	*Operation / Construction*	✔		The Proposed Development is in an area with several other plans and projects which have either come forward or are expected to come forward. There is currently insufficient information available to determine that potential effects arising from the Proposed Development, associated with noise and vibration during the construction stage and noise during the operational phase, will not combine with those from other plans and projects.

8.7 Opportunities for Enhancing the Environment

8.7.1 At this time, based on the information available, the Proposed Development presents no opportunities for enhancing the baseline noise and vibration environment.

[44] Highways England (2020) Design Manual for Roads and Bridges, LA 111 Noise and Vibration, Version 2.0. Available online at: https://www.standardsforhighways.co.uk/tses/attachments/by-attachment-id/4b6c3ac3-c00d-41f2-8531-4744d1ed0a7c?inline=true (Accessed 13 May 2026).

8.8 Proposed Assessment Methodology

Relevant Legislation and Guidelines

8.8.1 The legislation presented in **Table 8-5** is relevant to the assessment of the effects on noise and vibration receptors:

Table 8-5: Legislation relevant to noise and vibration

Legislation	Context
Control of Pollution Act 1974 (CoPA)[45]	Makes provision for the agreement of noise levels and methods of working with Local Authorities such that working in accordance with the agreement is a defence against any prosecution under the Act. The Act established the concept of "*Best Practicable Means*" (BPM) as a defence against prosecution under the Act. The Act also enables the preparation of approved codes of practice (COP) for various sources.
Environmental Protection Act 1990 (EPA)[46]	Further establishes the BPM defence. The Act also establishes that noise from premises and also individual vehicles on the public highways can be a statutory nuisance if they are a nuisance or prejudicial to health. The Act also clarifies that noise from road traffic on the public highway is not a nuisance. Road traffic is different to the 'individual vehicle' considered above as road traffic consists of a mixture of numerous vehicles originating from, and travelling to, different locations, and is therefore 'anonymous', i.e. sound from road traffic cannot be attributed to any one particular construction site or operational facility. Conversely, an individual vehicle may be identifiable and associated with, for example, a specific commercial or industrial operation.

8.8.2 Key national policy relevant to the assessment of noise and vibration is outlined below in **Table 8-6**.

Table 8-6: National policy relevant to noise and vibration

Policy	Context
Planning Policy Wales (PPW)	PPW[47] sets out the land use planning policies of the Welsh Government, supplemented by Technical Advice Notes (TANs). PPW sets out the importance of fully considering potential noise impacts from new energy infrastructure when making planning decisions. Guidance around soundscapes promote a holistic approach to achieving well-being goals by considering the context of the sound in a given environment, and not just the absolute level of a sound.

[45] UK Government (1974). Control of Pollution Act 1974. (online) Available at: https://www.legislation.gov.uk/ukpga/1974/40 (Accessed 8 March 2022).
[46] UK Government (1990). Environmental Protection Act 1990. (online) Available at: http://www.legislation.gov.uk/ukpga/ 1990/43/contents (Accessed 8 March 2022).
47 Welsh Government (2021). Planning Policy Wales. Edition 12. (Online) Available at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf (Accessed 16 August 2024),

Policy	Context
Future Wales: The National Plan 2040[48]	Future Wales is the national development framework for Wales and has development plan status. ***"Policy 18 – Renewable and Low Carbon Energy Developments of National Significance*** *Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:* *…* *7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance; …* *11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.* *The cumulative impacts of existing and consented renewable energy schemes should also be considered."*
Welsh Assembly Government: Technical Advice Note (TAN) 11: Noise (1997)[49]	TAN 11 provides general advice on noise and, with regard to industrial development, refers to superseded versions of noise related British Standards (BSs): BS 4142 and BS 8233; And with regard to construction noise: BS 5228.
Vale of Glamorgan Local Development Plan 2011-2026[50]	The adopted Local Development Plan (LDP) provides policies to guide appropriate development in the administrative area of Vale of Glamorgan Council. Policy MD 5 – Environmental Protection, refers to safeguarding residential amenity with regard to noise: *"Development proposals will be required to demonstrate they will not result in an unacceptable impact on people, residential amenity, property and / or the natural environment from either:* *…4. 4. Noise, vibration, odour and light nuisance.*
Noise and Soundscape Plan for Wales 2023 – 2028	Under the heading *'Considering soundscapes as we decarbonise our society'* the importance of public attitude to renewable energy schemes is underlined, noting that *'The effort to decarbonise can therefore be undermined if those technologies generate noise that results in annoyance, complaints, adverse media reports and/or regulatory action to abate the noise'*.

8.8.3 The technical guidance contained in **Table 8-7** is relevant to the assessment of noise and vibration effects.

48 Welsh Government (2021). Future Wales: The National Plan 2040. (Online) Available at: https://gov.wales/sites/ default/files/publications/2018-09/tan11-noise.pdf (Accessed 1 August 2024).
[49] Welsh Assembly Government (1997). Technical Advice Note 11: Noise. (Online) Available at: https://gov.wales/sites/ default/files/publications/2018-09/tan11-noise.pdf (Accessed 30 October 2023).
[50] Monmouthshire County Council (2014). Monmouthshire County Council Adopted Local Development Plan 2011-2021. (online) Available at: https://www.monmouthshire.gov.uk/app/uploads/2017/05/Adopted-Local-Development-Plan-with-PDF-tags.pdf (Accessed 31 July 2024).

Table 8-7: Technical Guidance relevant to noise and vibration

Technical Guidance	Context
Guidelines for environmental noise impact assessment[51]	Contains guidance on undertaking EIA for noise, including guidance on criteria for ambient noise changes.
Calculation of Road Traffic Noise (CRTN) [52]	Describes the procedures for calculating road traffic noise.
ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors: Part 2 Engineering method for the prediction of sound pressure levels outdoors[53]	Describes the method of calculating the attenuation of sound to predict environmental noise levels.
BS 5228-1:2009+A1:2014 Noise and vibration on construction and open sites. Part 1: Noise[54]	Provides a recommended scope for construction noise assessment (the ABC Method) as presented in Annex E. The ABC Method relies on determining threshold values for potential significant effects at noise sensitive receptors based upon the results of ambient sound monitoring.
BS 5228-2:2009+A1:2014 Noise and vibration on construction and open sites. Part 2: Vibration[55]	Provides methods and criteria for assessing ground borne vibration, which may be used when considering the potential for significant effects due to construction vibration.
BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound[56]	Standard for determining magnitude of impact of operational noise. The methods provided in BS 4142 address the potential for cumulative noise effects through determination of existing baseline conditions and consideration of context, including consideration of the level and character of the specific sound (i.e. noise from any new or additional plant) in relation to the level and character of the residual sound (i.e. the existing ambient sound before the addition of the specific sound, including the extent of any pre-existing impacts and the potential for these to increase with the addition of the specific sound).
BS 7445 – Description and Measurement of Environmental Noise[57,58]	Standards setting out general methods for carrying out, and reporting of, environmental noise surveying.

[51] IEMA, November 2014. Guidelines for environmental noise impact assessment, Version 1.2.
[52] HMSO (1988). Calculation of Road Traffic Noise.
[53] International Standards Organisation (ISO, 2024). International Standard ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors. ISO; Geneva.
[54] British Standards Institution (BSI, 2014). British Standard BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. BSI; London.
[55] British Standards Institution (BSI, 2014). British Standard BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. BSI; London.
[56] British Standards Institution (2019). BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound.
[57] British Standards Institution (2003). BS 7445-1:2003 Description and measurement of environmental noise – Part 1: Basic quantities and procedures.
[58] British Standards Institution (1991). BS 7445-2:1991 Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use.

Assessments of Effects Methodology

8.8.4 Representative baseline sound levels will be determined based on the results of the baseline monitoring undertaken between 6th March and 13th March 2026. The representative baseline sound levels will inform the assessment of potential noise effects during the construction, operation and decommissioning phases of the Proposed Development.

8.8.5 Noise levels due to the construction and operation of the Proposed Development will be predicted based on details of the plant requirements and proposed locations of construction activities and operational plant.

8.8.6 It is considered unlikely that any cumulative adverse effects will arise during the construction and operational phases based on the proposed nearby developments detailed in **Section 4.10**, which are limited in scale. However, should any receptors be identified as being potentially adversely affected due to parallel construction programmes, then this will be considered in the EIA subject to the availability of proposed construction activities. Study areas used for the assessment of effects from the Proposed Development would be used for assessment of cumulative effects from nearby developments.

Significance Criteria

Sensitivity of receptors

8.8.7 **Table 8-8** below describes the receptor sensitivity which has been produced on the basis of experience of assessing similar facilities and the application of professional judgement, taking into account the draft guidance in '*Noise and Soundscape Plan for Wales 2023 – 2028*'.

Table 8-8: Establishing the sensitivity of receptors

Sensitivity	Examples
High	Dwellings, hospital operating theatres, outdoor recreation areas where tranquility is intrinsic to the location (e.g., 'Green Flag Award winning sites and tranquil local nature reserves').
Medium	Schools, hotels, outdoor recreation areas where tranquility may be valued but is not intrinsic to the location.
Low	Offices.
Negligible	Industrial and commercial premises.

Determining magnitude of change – Construction activity vibration

8.8.8 If significant sources of construction vibration (i.e. piling and/ or use of vibratory rollers) are proposed or cannot be ruled out, then levels of construction vibration would be predicted and assessed at the nearest NSRs using the methods and criteria discussed in BS 5228-2:2009+A1:2014. If percussive piling and the use of vibratory rollers can be ruled out, then there would not be any likely significant effects due to construction vibration.

Determining magnitude of change – Construction activity noise

8.8.9 The determination of the magnitude of change due to construction noise is based on the ABC method, provided in Annex E of BS 5228-1:2009+A1:2014. The method relies on comparing predicted noise levels with a significance threshold determined based on the measured baseline sound levels during the period when works would take place. Construction noise levels will be predicted on the basis of the information provided regarding the construction schedule and construction methods and the results of the baseline monitoring.

8.8.10 The activities with the greatest potential to generate noise emissions are anticipated to occur during normal construction hours (i.e., weekday daytimes), however there is potential that Horizontal Directional Drilling (HDD) may be required, and this typically entails some noise emissions during the night-time, as HDD requires that pumps run continuously to ensure that drilled bore sections do not collapse.

8.8.11 Analysis of the baseline sound level survey results will be undertaken to determine the threshold categories for receptors in accordance with the ABC method in BS 5228-1. **Table 8-9** details the basis for assessing magnitude of change in accordance with the ABC method in BS 5228-1. Initially, it is proposed that non-residential receptors would be assessed using the same criteria below as for dwellings.

Table 8-9: Establishing the magnitude of change due to construction noise (dwellings)

Magnitude	Criteria	Semantic
High	Noise levels exceeding BS 5228-1 threshold for a duration which triggers the requirement to provide additional noise insulation/ temporary rehousing.	Construction noise levels very much greater than baseline and disruptive.
Medium	Noise levels exceeding BS 5228-1 threshold for a duration which does not trigger the requirement to provide additional noise insulation/ temporary rehousing.	Construction noise levels greater than baseline and potentially disruptive.
Low	Noise levels equal to, but not exceeding, BS 5228-1 threshold.	Construction noise levels just greater than baseline. Very unlikely to be disruptive.

Magnitude	Criteria	Semantic
Negligible	Noise levels not exceeding BS 5228-1 threshold.	Construction noise levels may be just above or below baseline noise levels, but not disruptive.

Determining magnitude of change – Operational noise

8.8.12 **Table 8-10** below provides the magnitude of change categories for assessing operational noise, based on the results of the initial estimate of impact undertaken in accordance with BS 4142:2014+A1:2019. The final determination of magnitude of change depends on consideration of the context, as required by the method detailed in the standard.

Table 8-10: Magnitudes for operational site noise

Magnitude	Initial Estimate of Impact
High	Rating levels significantly exceeding (+8 dB, or above) Receptor background sound levels. Final determination of magnitude of change subject to consideration of context.
Medium	Rating levels moderately exceeding (+3 to +7 dB above) Receptor background sound levels. Final determination of magnitude of change subject to consideration of context.
Low	Rating levels just exceeding (+1 to +2 dB above) Receptor background sound levels. Final determination of magnitude of change subject to consideration of context.
Negligible	Rating levels equal to, or lower than, background sound levels. Final determination of magnitude of change subject to consideration of context.

Construction noise and vibration: decommissioning

8.8.13 The environmental effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works. Therefore, the likely significance of effects relating to the construction phase assessment will be applicable to the decommissioning phase.

Determination of significance

8.8.14 **Table 8-11** below provides the matrix which will be used to determine the significance of effects based on the sensitivity of the receptor and the predicted magnitude of change.

8.8.15 The additional diagonal of 'potentially significant' effects reflects the complex nature of noise impact assessment, which often relies not only on the difference between the predicted sound level and the baseline sound level, but also on absolute levels, the total ambient sound level, and other factors such as the time of day, the character of the sound, the duration that a sound may be present for, etc. This approach allows for appropriate application of professional judgement in cases where there are various factors to consider when determining the significance of effects.

Table 8-11: Matrix for Determining Significance of Effect

		Sensitivity (Value / Importance)			
		High	**Medium**	**Low**	**Negligible**
Magnitude of Change	**Large**	Major	Moderate – Major	Minor – Moderate	Negligible
	Medium	Moderate - Major	Moderate	Minor	Negligible
	Small	Minor – Moderate	Minor	Negligible - Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Note: Significant effects are those identified as 'Major'. 'Moderate' effects would normally be deemed to be significant. However, there may be some exceptions, depending on professional judgment of the context of the scenario.

8.9 Limitations and Assumptions

8.9.1 To ensure transparency within the EIA process, limitations the following limitations and assumptions have been identified:

8.9.2 There is currently limited information available on:

Construction activities:

- Locations of specific construction activities (construction compound, road improvements, etc.); and
- Plant requirements.

Operational plant:

- Noise emission data for all operational plant; and
- Construction activities, locations and programme for nearby proposed developments.

8.9.3 To address the limitations identified above, the following approach will be taken:

Construction activities and operational plant:

- Current design information at the time of preparing this EIA Scoping Report is preliminary. The assessment presented in the ES will include the latest design information available at the time.
- Where design information is not available, reasonable worst-case assumptions will be made.
- Where construction from nearby development is identified to occur in parallel to the construction of the Proposed Development, reasonable worst-case assumptions will be made to assess cumulative impact.

8.10 Questions for LPA

- Do you agree with the study areas proposed for each of the assessments scoped into the EIA?
- Are there any receptors not identified that you would like to see included in the EIA?
- Are there any opportunities for enhancing the environment that you feel should be considered in the EIA?

9. Historic Environment

9.1 Introduction

9.1.1 The historic environment chapter of the ES will set out the planning framework in respect of the historic environment and will consider the potential likely significant effects on historic assets that may arise from the construction, operation and decommissioning of the Proposed Development. The Historic Environment is defined by the physical evidence of past human activity, such as above ground heritage assets (i.e. listed buildings), below ground heritage assets (archaeological remains) as well as historic landscapes.

9.1.2 The chapter will be supported by a series of technical appendices comprising:

- Historic Environment Desk-Based Assessment (HEDBA). This will update the HEDBA produced by WSP for the Proposed Development (see **Appendix H**); and
- Geophysical Survey report (see **Appendix C**).

9.1.3 The documentation produced will assess the likely effects of the Proposed Development on the historic environment and will also include recommendations to mitigate any adverse effects, where appropriate.

9.2 Consultation

9.2.1 **Table 9-1** summarises relevant comments received from the Council within the response to a Pre-Application Request and EIA Screening Direction, and how they will be addressed as part of the EIA.

Table 9-1: Consultee comments on the Screening Report, regarding the Historic Environment

Consultee	Document	Comments relevant to the Historic Environment	Response
VGC (LPA)	Pre-application Response Letter (P / DC / 2025 / 00095 / EPA) dated 11 March 2026	Reference was made to national and local policy requirements and to potential effects to on-site archaeology and to off-site historic assets. It's stated that consideration should be paid to potential effects on the settings of: • Listed buildings in the south, including Church of St Lawrence and Swanbridge House; • Lower Cosmeston Farm; • The medieval village; and • The historic settlements of Cog, Sully, and Penarth.	The EIA will consider the effect of the Proposed Development on the settings of listed buildings, where required. Designated Historic Assets to be included in the assessment are identified in **Table 9-2**. The contribution of the part of the site located to the east of St Mary's Well Bay Road to the

Consultee	Document	Comments relevant to the Historic Environment	Response
		It noted the contribution of the part of the site located to the east of St Mary's Well Bay Road to the historic landscape. It was stated that consultation should be undertaken with Heneb and Cadw.	historic landscape will also be considered. Consultation will be undertaken with both Heneb and Cadw.
VGC (LPA)	Final Report (Ref: 2025 / 01286 / SC1) dated 16 December 2025	"*Council's Heritage Officer – Responded to comment that the proposed development site does not have any heritage assets within the red line but does have a number of local to national designations in the near vicinity and therefore there is potential to impact on setting. It is noted that a planning application would be supported by a heritage report which is welcomed. It is requested that Heneb are consulted as it is noted that there are Historic Environment Records and potential for archaeology within the red line*" (pg.6)	The EIA will consider the effect of the Proposed Development on the settings of listed buildings near the vicinity of the Proposed Development Area, where relevant. Designated Historic Assets to be included in the assessment are identified in **Table 9-2**. Consultation will be undertaken with Heneb.
VGC (LPA)	Final Report (Ref: 2025 / 01286 / SC1) dated 16 December 2025	"*Heneb, The Trust for Welsh Archaeology – Responded to advise that there are archaeological and cultural heritage issues which need to be addressed in order to determine the impact of the proposals on the historic environment. It is commented that the Historic Environment Record (HER) indicates that the proposal is located in any area of archaeological potential, with several archaeological sites known from the area, including Cosmeston Medieval Village. Additionally, it is noted that a recent geophysics survey showed potential archaeological features in the eastern and western areas. It is concluded that it is possible that the ground disturbing works may locate archaeological material and recommended that a pre-determination Archaeological Field Evaluation is carried out in order to identify the archaeological potential of the site, as well as to determine any impact of the proposal on the archaeological resource*" (pg. 8) "*The development would not directly impact on known heritage sites, however the impact of the proposal in the*	The EIA will consider the effect the Proposed Development will have on the setting of listed buildings near the vicinity of the Proposed Development Area, where relevant. Designated Historic Assets to be included in the assessment are identified in **Table 9-2**. Consultation will be undertaken with Heneb. The recommendation for evaluative archaeological work is noted and have been included in the recommendations of the assessment.

Consultee	Document	Comments relevant to the Historic Environment	Response
		landscape and settings of local historic assets, including Scheduled Monument, would need to be considered as part of an application. There is potential to reduce any adverse impacts through siting, design, and landscaping. Based on the findings of the Geophysical Survey and known archaeological records there is potential for buried archaeological resource to be disturbed, although the eastern area, which appears has the highest potential to support buried archaeological remains, has been excluded. A Archaeological Field Evaluation, as recommended by Heneb, is required to fully assess the impact on archaeological resource" (pg. 12)	

9.3 Study Area

9.3.1 The study area for the collation of information on historic assets is 1km from the Proposed Development Area, for both designated and non-designated heritage assets. These distances have been judged as appropriate to provide the context of, and potential for, surviving archaeological remains within the Proposed Development and for assessing the impact of the Proposed Development on designated historic assets.

9.3.2 The 1km study area is considered appropriate for considering potential effects as a result of change to the settings of historic assets as the ZTV and site appraisals have indicated that any noticeable change arising from the Proposed Development would likely be concentrated within 1km of the Proposed Development Area (see **Figure 9 (Appendix A)**). The limited visibility likely to be available beyond that, where views would likely be filtered by intervening vegetation, is not likely to result in notable change in the settings of any historic assets.

9.4 Baseline Conditions

Historic Environment Desk-Based Assessment

9.4.1 An initial desk-based assessment has been undertaken with reference to publicly available data from the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historic Monuments of Wales (RCAHMW); designated asset data held by Cadw and HER data held by Heneb, the Vale of Glamorgan County Treasures list for locally listed buildings, as well as historic maps obtained in order to determine the present baseline conditions (see **Appendix H**).

9.4.2 The HER dataset includes information on several different aspects of the historic environment including known surviving assets, records of former structures or sites found through documentary evidence and findspots of artefacts. Due to the range of data included within the HER, these records must be considered not only for their historic value but also for their archaeological potential. Many former assets may have already been entirely removed; findspots may indicate former activity but are not, in themselves, evidence for buried archaeological remains. This consideration also takes into account any former archaeological events that may have occurred within the study area, for example archaeological monitoring or excavation.

9.4.3 The Cadw Guide to Good Practice on using the Register of Landscapes of Historic Interest in Wales[59] will not be consulted as part of the assessment process as there are no Landscapes of Historic Interest within 5km of the Proposed Development Area.

Geophysical Investigation Report

9.4.4 Heneb – Dyfed Archaeological Services were commissioned in August 2025 to undertake a geophysical survey across the 56.3 hectares of the Site, divided into 16 fields. The purpose of the survey was to provide a better indication of the archaeological potential of the Site and if required, enabling targeting of any further archaeological mitigation before or during development.

9.4.5 Possible archaeological remains were identified throughout the survey area. These included potential ring ditches, enclosures, trackways and areas of activity that could range from the prehistoric, Romano British and medieval periods.

9.4.6 The geophysical survey report can be found in **Appendix C** and will form part of the technical appendices of the ES.

Designated Historic Assets

9.4.7 The Proposed Development Area does not contain any nationally designated historic assets, such as scheduled monuments, listed buildings, registered parks and gardens, or locally listed buildings. There are eight Grade II listed buildings and two scheduled monuments within the 1km study area around the Site, which comprise:

- Anti-aircraft and Coastal Battery West of Lavernock Point (SAM number GM448), Scheduled Monument;
- St Mary's Well Bay Pillbox (SAM number GM619), Scheduled Monument; and
- Sully Island "Danish" Fort (SAM number GM035), Scheduled Monument.
- Planned group of farmyard buildings at Cog Farm (Cadw ref. 13458), Grade II listed building;
- Eight rickstands to N side of Cog Farm (Cadw ref. 13459), Grade II listed building;

[59] Guide to Good Practice on using the Register of Landscapes of Historic Interest in Wales in The Planning and Development Process, Cadw, Revised (2nd) Edition (2007)

- Cog House (Cadw ref. 13460), Grade II listed building;
- Church of St Lawrence (Cadw ref. 24060), Grade II listed building;
- Barn at Home Farm (Cadw ref. 26972), Grade II listed building;
- Swanbridge House (Cadw ref. 26974), Grade II listed building;
- Nicells (Cadw ref. 87656), Grade II listed building; and
- Original house at Lower Cosmeston Farm (Cadw ref. 87852), Grade II listed building.

Non-designated Historic Assets

9.4.8 The Vale of Glamorgan County Treasures inventory provides a unified list of historic built assets located in the Vale of Glamorgan and describes entries that are recognised for their local merit (locally listed buildings, known as County Treasures). These are referred to as non-designated historic assets for the purposes of this report and subsequent assessment.

9.4.9 There are 14 known non-designated historic assets recorded on the HER (and included in the County Treasures list produced by Vale of Glamorgan60), that are located within the Study Area, including seven built heritage and seven archaeological non-designated historic assets, which comprise:

- Hill Cottage, Sully (GGAT01598s), built heritage;
- Sutton Farmhouse, Sully (GGAT01599s), built heritage;
- War Department Boundary Marker No. 1, Roundbush Rocks (GGAT05572s), built heritage;
- War Department Boundary Marker No. 2, Roundbush Rocks (GGAT05573s), built heritage;
- War Department Boundary Marker No. 3, Roundbush Rocks (GGAT05574s), built heritage;
- War Department Boundary Marker No. 4, Roundbush Rocks (GGAT05575s), built heritage;
- Trigpoint Pillar, Hopkins Mount (GGAT05897s), built heritage;
- Flint Scatter, Lavernock (GGAT02750s; 02750s), archaeological;
- Findspot, Sully and Lavernock Community (GGAT07558s; 07558s), archaeological;
- Findspot, Sully (GGAT01390s; 01390s), archaeological;
- Findspot, Sully (GGAT01399s), archaeological;
- Hopkins Mount, Swanbridge (GGAT01720s; 01720s), archaeological;
- Lavernock (GGAT02779s; 02779s), archaeological; and
- Lavernock Cropmark East (GGAT03118s; 03118s).

[60] https://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Conservation/County-Treasures.pdf

9.4.10 These assets along with other known archaeological remains and past investigations within the 1km Study Area has been used to assess the potential for previously unrecorded archaeological remains.

9.5 Mitigation

9.5.1 Several phases of work have previously been undertaken to evolve and inform the design of the Proposed Development. As part of Design Point 1, the Site was initially subject to a preliminary assessment to identify opportunities and constraints and identify suitable land parcels. As part of this assessment, the avoidance of known designated and non-designated historic assets was taken into consideration.

9.5.2 To assist with the refinement of potential land parcels, a Historic Environment Desk-Based Assessment (HEDBA) was produced by WSP in 2025 as part of Design Point 2, which included a historic background, impact assessment and recommendations.

9.5.3 Geophysical survey was undertaken in July 2025 by Dyfed Archaeological Services as part of Design Point 3. The survey identified geophysical anomalies potentially indicating the presence of buried archaeological features and was undertaken to assist with identifying fields suitable for ground-mounted solar PV development.

9.5.4 The development of the Proposed Development is an iterative process that will take into consideration the potential for effects on historic environment, adopting measures to avoid or minimise impacts where possible in the first instance. Where disturbance cannot be avoided, measures should be taken to ensure the adverse effects are minimised.

9.5.5 Where avoidance of impacts to buried historic assets are not possible, an appropriate mitigation strategy will be devised to secure preservation by record (e.g. archaeological monitoring of groundworks) before any loss occurs, which can be agreed in advance with the local planning authority and respective archaeological advisor.

9.5.6 Cross-discipline engagement will also be undertaken to ensure that proposed landscape and ecological environmental measures take into consideration the potential opportunities and constraints relevant to the historic environment.

9.6 Description of Likely Physical Effects

Potential Receptors

9.6.1 The Proposed Development could affect historic environment receptors through:

- Direct disturbance of historic assets;
- Changes to the settings of historic assets, affecting their significance; and
- Changes to the historic landscape.

Direct Disturbance

9.6.2 Any effects arising from direct disturbance to historic assets would be expected to occur during the construction phase and would be considered permanent and irreversible.

9.6.3 Direct disturbance would arise only from the construction of the Proposed Development. Therefore, effects on known historic assets will be considered only where these are located within the footprint of the Proposed Development Area. Direct effects on historic assets outside the footprint of the Proposed Development Area will not occur and are scoped out.

9.6.4 There is potential for previously unrecorded historic assets to be directly affected by the Proposed Development. Such effects will be considered with reference to a characterisation of the potential presence of such historic assets developed from an understanding of the historic landscape context, and reference to appropriate cartographic and documentary sources.

Effects on Setting

Changes to Setting

9.6.5 The setting of historic assets is defined in Cadw guidance[61] as: "*The setting of a historic asset includes the surroundings in which it is understood, experienced and appreciated, embracing present and past relationships to the surrounding landscape*."

9.6.6 Cadw guidance identified a staged approach to the assessment of effects on settings, with the first stage being the identification of the historic assets which may be affected. In accordance with guidance, this has been done whilst also considering:

- The location, size and scale of the Proposed Development; and
- The location of the identified historic assets.
- On this basis, designated historic assets within 1km of the Proposed Development will be considered for inclusion in the assessment.

9.6.7 **Table 9-2** provides a list of the designated historic assets and County Treasures within the 1km study area that have been scoped in or out of the assessment. Professional judgement and the ZTV (**Figure 9, Appendix A**) have been utilised in formulating this list. Designated historic assets beyond 1km of the Proposed Development Area (scheduled monuments, listed buildings, conservation areas, registered parks and gardens) have been scoped out of further assessment, as they will not be within the ZTV.

[61] Cadw, 2017. *Setting of Historic Assets in Wales*

Table 9-2: Designated Historic Assets within the 1km study area to be scoped in/out of further assessment

Reference (see Figure 9)	Historic Asset and reference no.	Designation	Within ZTV?	Asset scoped in or scoped out	Justification
A1	Anti-aircraft and Coastal Battery West of Lavernock Point (SAM number GM448)	Scheduled Monument	Yes	Scoped In	The asset has been identified as within the theoretical visibility of indicative areas proposed for the solar panels and may experience adverse impacts during operation.
A15	St Mary's Well Bay Pillbox (SAM number GM035)	Scheduled Monument	Yes	Scoped In	The asset has been identified as within the theoretical visibility of indicative areas proposed for the solar and panels and may experience adverse impacts during operation.
A16	Sully Island "Danish" Fort (SAM number GM035)	Scheduled Monument	Yes	Scoped In	The asset has been identified as within the theoretical visibility of indicative areas proposed for the solar panels and may experience adverse impacts during operation.
A88	Planned group of farmyard buildings at Cog Farm (Cadw ref. 13458)	Grade II listed building	Yes	Scoped In	The asset is within the ZTV and may experience adverse impacts during operation.
A126	Barn at Home Farm (Cadw ref. 26972) A126	Grade II listed building	Yes	Scoped In	The asset has been identified as within the theoretical visibility of indicative areas proposed for the solar panels and may experience adverse impacts during operation.
A90	Cog House (Cadw ref. 13460)	Grade II listed building	No	Scoped Out	The asset is not within the ZTV and will not experience adverse impacts during construction and operation.
A113	Church of St Lawrence (Cadw ref. 24060)	Grade II listed building	No	Scoped Out	The asset is not within the ZTV and will not experience adverse impacts during construction and operation.
A89	Eight rickstands to N side of Cog Farm (Cadw ref. 13459) A89	Grade II listed building	No	Scoped Out	The asset is not within the ZTV and will not experience adverse impacts during construction and operation.

Reference (see Figure 9)	Historic Asset and reference no.	Designation	Within ZTV?	Asset scoped in or scoped out	Justification
A128	Swanbridge House (Cadw ref. 26974)	Grade II listed building	No	Scoped out	The asset is not within the ZTV and will not experience adverse impacts during construction and operation.
A131	Nicells (Cadw ref. 87656)	Grade II listed building	No	Scoped out	The asset is outside of the ZTV and will not have intervisibility with the Proposed Development. The asset lies approximately 800m to the northwest of the Proposed Development Area and is unlikely to experience adverse impacts during construction.
A132	Original House at Lower Cosmeston Farm (Cadw ref. 87852)	Grade II listed building	No	Scoped out	The asset is outside of the ZTV and will not have intervisibility with the Proposed Development. The asset lies approximately 175m to the northeast of the Proposed Development Area and is unlikely to experience adverse impacts during construction.

9.6.8 Other potential receptors to be scoped in comprise the following:

- Non-designated built heritage within the Proposed Development and the 1km study area; and
- Buried non-designated historic assets within the Proposed Development.

9.7 Description of Likely Significant Effects

Elements Scoped In or Out of Further Assessment

9.7.1 The likely significant historic environment effects that will be taken forward for assessment in the ES are summarised in **Table 9-3**.

Table 9-3: Likely significant historic environment effects to be assessed in the Environmental Statement

Receptor	Phase	Scoped In or Scoped Out	Justification
Known historic assets, and any currently unidentified assets, located within the Proposed Development Area.	Construction	Scoped in	There may be direct disturbance to, or loss of historic assets and any currently unidentified assets located within the Proposed Development Area due to construction activities such as site preparation and construction of associated infrastructure (tracks, control buildings / substations, contractors' facilities, site access.
Historic assets identified in Table 9-2 which are located within the 1 km study area around the Proposed Development Area and identified as being potentially affected by change in their settings.	Construction / Decommissioning	Scoped out	Due to the short-term, temporary nature of the construction and decommissioning phases, these would not give rise to potentially significant effects on the settings of historic assets.
Historic assets identified in Table 9-2 which are located within the 1 km study area around the Proposed Development Area and identified as being potentially affected by change in their settings.	Operation	Scoped in	Historic assets may potentially experience changes to their significance through changes to their settings arising from the operation of the solar farm.
Known historic assets, and any currently unidentified assets, that are located within the Proposed Development Area.	Operation	Scoped out	This has been scoped out on the basis that once the Proposed Development has been completed no further ground disturbance will occur.
Setting of non-designated above-ground historic assets that lie beyond 100m from the Proposed Development.	Operation	Scoped out	An assessment of the effect upon the setting of these assets is scoped out on the basis that such assets are not significant enough to warrant such an assessment, and it is considered unlikely that significant environment effects would arise where these assets are not within or immediately adjacent to the Proposed Development Area. This is in line with proportionality set out in Planning Policy Wales Edition 12.

Receptor	Phase	Scoped In or Scoped Out	Justification
Known historic assets, and any currently unidentified assets, located within the Proposed Development Area.	Decommissioning	Scoped out	The decommissioning of the Proposed Development would not require any additional land take. The areas that would be disturbed during decommissioning would have been previously disturbed during construction. As such, it is unlikely that any previously unrecorded historic assets remain, and the risk of damage or loss is unlikely.
Setting of designated historic assets outside of the 1km study area.	Construction, Operation, and Decommissioning	Scoped out	An assessment of the effect upon the setting of designated historic assets outside 1km of the Proposed Development has been scoped out as factors such as location, distance, intervening topography and built development means there would be no alterations to their settings and would not be affected by the Proposed Development.
Effects on areas listed within the Landscapes of Historic Interest in Wales.	Construction, Operation, and Decommissioning	Scoped out	There are no landscapes of historic interest within 5km of the Proposed Development Area.
Cumulative effects on historic assets as a result of the Proposed Development in combination with other existing or approved projects.	Construction, Operation, and Decommissioning	Scoped out	There will be no significant cumulative effects on historic assets as a result of the Proposed Development in combination with other developments identified in **Paragraph 1.1.1**. Effects arising from loss of or disturbance to historic assets will be confined to the Proposed Development Area, so there are no assets which are likely to extend to the boundaries of the other developments. Residential development at Upper Cosmeston Farm (2020/01170/OUT) will have a minor adverse effect on Grade II listed building of Lower Cosmeston Farm, but this asset is outside of the ZTV for the Proposed Development and so there will be no cumulative effect.

9.7.2 Measures to avoid known assets, including any identified during the assessment, and to identify and record any assets where disturbance cannot be avoided, will be set out to ensure that adverse direct effects can be effectively mitigated.

9.8 Opportunities for Enhancing the Environment

9.8.1 Opportunities for enhancing the historic environment relate primarily to increasing an appreciation and understanding of heritage significance through any archaeological mitigation work, that may be required, creating an opportunity for public benefit and knowledge enhancement. This should be integrated into the delivery of solar farms as best practice[62]. The results of all archaeological evaluations and investigations will be placed in the public domain and the material curated in an appropriate archive following the appropriate professional standards[63].

9.8.2 Opportunities to engage local communities and improve public understanding of the historic environment can take a variety of forms (e.g. informative signage describing archaeological findings, website updates, social media engagement). These opportunities will be considered in consultation with the Council's Archaeological Advisor and appropriate professional guidance[64].

9.9 Proposed Assessment Methodology

Relevant Legislation, Planning Policy, Technical Guidance

9.9.1 Relevant legislation, planning policy, and professional guidance provide the framework for assessing potential effects on the historic environment of the ES, including buried archaeological remains, built heritage assets, and historic landscapes.

Legislative Framework

9.9.2 The Historic Environment (Wales) Act 2023 (hereafter referred to as 'the Act') and its suite of supporting secondary legislation came into full effect on 4th November 2024 to provide a consolidated legislative framework for the management and protection of the Welsh historic environment. As such, this replaced the provisions of the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990 within Wales.

[62] Archaeology and Solar Farms, Good Practice Guide: Advice for developers, archaeological advisors, consultants and contractors, Association of Local Government Archaeological Offices (ALGAO), CIfA, FAME, Historic England, and Solar Energy UK, April 2026

[63] Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives, CIfA, 2020

[64] Toolkit for Public Engagement, version 1.0, CIfA, 2023

9.9.3 Nationally important archaeological sites (both above and below-ground remains) may be identified and protected under the Act. An application is required for any works affecting a scheduled monument. Prior written permission, known as scheduled monument consent (SMC) is required from Cadw for works physically affecting a scheduled monument. SMC is separate from the statutory planning process. The Act also sets out the legal requirements for the control of development and alterations which affect listed buildings or conservation areas (including buildings of heritage interest within a conservation area), as well as making statutory provision for the maintenance of Historic Environment Records, a register of historic parks and gardens and a list of historic place names in Wales.

Planning Policy Framework

9.9.4 The assessment will be undertaken with reference to national and local planning policy, including:

- Future Wales: The National Plan 2040 (Welsh Government, 2021);
- Planning Policy Wales (Welsh Government, 12th Edition February 2024);
- Planning Policy Wales Technical Advice Note 24: The Historic Environment – the Setting of Historic Assets (2025); and
- The Vale of Glamorgan Local Development Plan. Policy MD8: Historic Environment (Local Development Plan, 2017).

Professional standards and Guidance

9.9.5 The assessment will be prepared in accordance with recognised professional standards and best practice guidance for archaeology and the historic environment. These comprise:

- Vale of Glamorgan County Treasures Supplementary Planning Guidance (Vale of Glamorgan, 2009);
- Vale of Glamorgan County Treasures, Addendum July 2011 (Vale of Glamorgan, 2011);
- CIfA Code of Conduct: professional ethics in archaeology (CIfA 2022);
- CIfA Code of Conduct: professional conduct (CIfA 2021);
- CIfA Standard and Guidance for historic environment desk-based assessment (CIfA 2020a);
- CIfA Standard and Guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA 2020b);
- Heritage Impact Assessment in Wales (Cadw 2017);
- Setting of Historic Assets in Wales (Cadw 2017);
- Managing Historic Character in Wales (Cadw 2017);
- Cadw Conservation Principles for the sustainable management of the historic environment in Wales (2011); and

- Archaeology and Solar Farms, Good Practice Guide, Advice for developers, archaeological advisors, consultants and contractors (Association of Local Government Archaeological Officers, CIfA, Historic England, FAME, Solar Energy UK, 2026).

EIA Approach

9.9.6 The section will set out the planning and legislative context with respect to buried historic assets (archaeological remains), built historic assets and historic landscapes. It will include the methodology for assessing the environmental effects predicted during the construction, and operation (completed development) phases. It will provide a summary overview of the baseline conditions.

9.9.7 The EIA will include a description of the research undertaken and results obtained, as well as an assessment of the nature and potential significance of the effects of the Proposed Development. Consideration will be given to any necessary mitigation, following consultation with the Applicant and consultees. All work will be completed in accordance with the Chartered Institute for Archaeologists (CIfA) Code of Conduct and Standard and Guidance for Archaeological Desk-Based Assessments.

9.9.8 A HEDBA has been previously undertaken, which details existing historic assets (buried archaeological remains, above ground structures, and landscapes of heritage interest, and considers the potential for additional, unknown historic assets (see **Appendix H**). The report also considers the impact of the Proposed Development on the character and setting of historic assets within and beyond the Proposed Development Area. Regional HER data acquired during the production of the HEDBA will be reviewed to identify non-designated historic assets in and around the Proposed Development. The HEDBA will be revised to accommodate an amended Proposed Development Area and updated design layout and will form a technical appendix to the ES.

9.9.9 A Geophysical survey was undertaken by Heneb in September 2025, in order to provide a better indication of the archaeological potential of the Proposed Development Area and if required, enable targeting of any further archaeological mitigation requirements before or during development (see **Appendix C**).

9.9.10 Archaeological remains were identified throughout the Proposed Development Area. These included potential ring ditches, enclosures, trackways, and areas of activity that could range in date from prehistoric, Romano, British and medieval periods.

9.9.11 A programme of archaeological evaluation (trial trenching) will be undertaken by Heneb in the early summer of 2026. The evaluation will target anomalies identified through an earlier geophysical survey.

9.9.12 Depending on the results of the evaluation, further mitigation may be requested by the LPA through monitoring of works, and/or excavation.

Determining the Significance of Effects

9.9.13 The EIA Regulations recognise that developments will affect different environmental elements to differing degrees, and that not all of these are of sufficient concern to warrant detailed investigation or assessment through the EIA process. The EIA Regulations identify those environmental resources that warrant investigation as those that are "*likely to be significantly affected by the development*".

9.9.14 The EIA Regulations do not define significance, and it will be necessary to state how this will be defined for the EIA. The significance of an effect resulting from a development during construction or operation is most commonly assessed by reference to the sensitivity or value of a receptor and the magnitude of the effect, as set out in **Table 9-4**. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the Proposed Development.

9.9.15 For the purposes of assessing the significance of effects in EIA terms, heritage significance has also been assigned to one of four classes of value, with reference to the heritage interests described in Cadw's Conservation Principles[65] and relying on professional judgement as informed by policy and guidance. The hierarchy given in reflects the TAN24 distinction between designated and non-designated heritage assets. TAN24 further distinguishes between designated assets of the highest heritage significance (i.e. scheduled monuments, Protected Wreck Sites, Registered Battlefields, Grade I and II* listed buildings, Grade I and II* Registered Parks and Gardens, and World Heritage Sites) and other designated heritage assets. details the basis for assessing receptor value (heritage significance).

[65] Cadw (2019). Conservation Principles for the Sustainable Management of the Historic Environment in Wales [online]. Available at: https://cadw.gov.wales/sites/default/files/2019-05/Conservation_Principles%20for%20the%20sustainable%20managment%20fo%20the%20historic%20environment%20of%20Wales.pdf [Accessed: June 2026).

Table 9-4: Establishing the heritage significance of assets

Heritage significance	Summary rationale	Examples
High	Asset has significance for an outstanding level of archaeological, architectural, historic and/or artistic interest.	Designated heritage assets or non-designated assets of demonstrably schedulable quality such as World Heritage Sites, Scheduled Monuments. Grade I Listed Buildings. Grade II* Listed Buildings. Grade II Listed Buildings with exceptional qualities in fabric, historical association, and/or association/group value with heritage assets of high significance. Protected Wrecks. Registered Battlefields. Conservation Areas containing very important listed buildings. Grade I and II* Registered Parks and Gardens. Protected heritage landscapes (e.g., ancient woodland or historic hedgerows, heritage Sites of Special Scientific Interest). Burial grounds. Non-designated historic assets (above ground structures, landscape, townscape, buried remains) of national importance.
Medium		Grade II Listed Buildings. Conservation Areas. Grade II Registered Parks and Gardens. Locally listed buildings and buildings of regional importance and merit. Non-designated historic assets (above ground structures, landscape, townscape, buried remains) of regional importance.
Low	Asset has significance for elements of archaeological architectural, historic or artistic interest.	Non-extant Historic Environment Record (HER) references Item with no significant heritage value or interest.
Negligible	Due to its nature of form/condition/survival, cannot be considered as an asset in its own right.	Non-extant Historic Environment Record (HER) references Item with no significant heritage value or interest.

9.9.16 **Table 9-5** details the basis for assessing magnitude of change.

Table 9-5: Establishing the magnitude of change

Activity	Receptor
High	Loss of significance of an order of magnitude that would result from total or substantial demolition/disturbance of a heritage asset or from the disassociated of an asset from its setting.
Medium	Loss of significance arising from partial disturbance or inappropriate alteration of asset which will adversely affect its importance. Change to the key characteristics of an asset's setting, which gives rise to harm to the significance of the asset but which still allows its archaeological, architectural or historic interest to be appreciated.
Low	Minor loss to or alteration of an asset which leaves its current significance largely intact. Minor and short-term changes to setting which do not affect the key characteristics and in which the historical context remains substantially intact.
Negligible	Minor alteration of an asset which does not affect its significance in any discernible way. Minor and short term or reversible change to setting which does not affect the significance of the asset.

9.9.17 The matrix in **Table 9-6** has been prepared to guide the assessment of whether effects on the historic environment for the purposes of EIA are considered to be significant or not. The classification of the effect is judged on the relationship of the magnitude of impact to the assessed heritage significance of the resource. As a general rule, major and moderate effects are considered to be significant and minor and negligible effects are considered to be not significant. However, professional judgement is applied, where appropriate, to determine significance of effect.

Table 9-6: Matrix for Determining Significance of Effect

		Sensitivity (Value / Importance)			
		High	**Medium**	**Low**	**Negligible**
Magnitude of Change	**Large**	Major	Moderate – Major	Minor – Moderate	Negligible
	Medium	Moderate - Major	Moderate	Minor	Negligible
	Small	Minor – Moderate	Minor	Negligible - Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Note: Significant effects are those identified as 'Major'. 'Moderate' effects would normally be deemed to be significant. However, there may be some exceptions, depending on professional judgment of the context of the scenario.

9.10 Approach to consultation

9.10.1 Where necessary, engagement with relevant stakeholders (Cadw, Heneb, and local planning authority) will be undertaken when refining the scope of the historic environment assessment for the ES.

9.11 Limitations and Assumptions

9.11.1 To ensure transparency within the EIA process, the following limitations and assumptions have been identified:

- The scope of assessment for Historic Environment is based on the preliminary scheme design available at the time of submission. The assessment should be considered provisional pending the receipt of the final design.
- The baseline information presented in this assessment derives from the previously submitted HEDBA (see **Appendix H**). This will be updated and revised as part of the EIA process. The baseline information presented here should be considered provisional pending the revised HEDBA.
- Assessment of cumulative effects will be dependent on available information relating to other relevant plans and projects. Where such information is limited, this may in turn limit the efficacy of the assessment of cumulative effects

9.12 Questions for LPA

- Do you agree with the proposed 1km study area for the historic environment assessment?
- Do you agree with the receptors that are proposed to be scoped in or out of the historic environment assessment?
- Do you agree with the proposed scope of the historic environment assessment?
- Are there any receptors not identified that you would like to see included in the EIA?

10. Summary

10.1 Scope of the EIA

10.1.1 It is proposed that the following environmental factors, as listed under Article 3(1) of EU Directive 2014/52/EU, are included in the scope of the EIA:

- Biodiversity;
- Historic Environment;
- Landscape and Visual; and
- Noise and Vibration.

10.1.2 The factor-specific elements scoped in and out of further assessment are outlined in **Chapters 6** to **9** above.

10.2 Proposed Structure of the Environmental Statement

10.2.1 The proposed structure of the ES is set out below:

- Chapter 1: Introduction
- Chapter 2: Approach to the EIA
- Chapter 3: Site and Surrounding Area
- Chapter 4: Design Evolution and Alternatives
- Chapter 5: Project Description
- Chapter 6: Landscape and Visual Assessment
- Chapter 7: Biodiversity
- Chapter 8: Noise and Vibration
- Chapter 9: Historic Environment
- Chapter 10: Cumulative Effects
- Chapter 11: Summary of Effects

10.2.2 The Planning application will be supported by a series of additional stand-alone environmental assessments and management plans. These are described below:

- Arboricultural Impact Assessment;
- Carbon Balance Report;
- Design, Access, and Planning Statement;
- Drainage Statement;
- Flood Consequences Assessment;
- Glint and Glare Assessment;
- Habitats Regulations Assessment;
- Mineral Safeguarding Assessment;
- Outline Battery Safety Management Plan;
- Outline Construction Environment Management Plan;

- Outline Construction Traffic Management Plan;
- Outline Soil Management Plan;
- Pre-Application Consultation Report;
- Preliminary Risk Assessment;
- Transport Statement;
- Net Benefit for Biodiversity Statement; and
- Green Infrastructure Statement.