



Port Talbot Solar Limited

Information to Accompany a Scoping Opinion Request

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RSK



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Port Talbot Solar Limited

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1 INTRODUCTION

1.1 Background

- 1.1.1 RSK has been instructed by Port Talbot Solar Limited, as the Applicant, to produce information to accompany a Scoping Opinion request for its Port Talbot Solar Farm, hereafter referred to as the Proposed Development.
- 1.1.2 It is the intention of the Applicant to submit a Town and Country Planning Application to Neath Port Talbot Council (NPTC) and Bridgend County Borough Council (BCBC) as the relevant local planning authorities. The location of the Proposed Development and the application boundary (hereafter referred to as the 'Site boundary') are illustrated in the Site Location Plan in **Appendix A**. As shown in the Site Location Plan, the vast majority of the 81-hectare Site is located within the jurisdiction of NPTC, with only a small portion (415 m) of the 5.5 km access track located within the jurisdiction of BCBC.
- 1.1.3 The Proposed Development comprises a solar farm, associated ancillary infrastructure and landscape and environmental mitigation and enhancements on land at Crugwyllt Fawr, Margam, Port Talbot, SA13 2TB.
- 1.1.4 The purpose of this 'EIA Scoping Report' is to provide the information required by the local planning authorities to adopt a Scoping Opinion. It aims to establish the proposed scope of the Environmental Statement (ES) that will be prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 and will accompany the Applicant's forthcoming planning application.

1.2 The Applicant

- 1.2.1 The Applicant, Port Talbot Solar Limited is a special purpose vehicle registered by Qualitas Energy. Qualitas Energy has been leading the drive of renewable energy, energy transition, and sustainable infrastructure development in Europe for over 18 years. The company has a team of circa. 30 employees operating across three strategic locations in the UK: London, Bristol and Edinburgh who work to achieve our shared objective and commitment to sustainability.
- 1.2.2 In total, 1.2 million homes have been supplied with clean energy through Qualitas Energy electricity generation. This has successfully avoided the emission of 1 million metric tonnes of CO₂ equivalent.
- 1.2.3 The business has 14GW in its renewable energy asset portfolio in operation and development. Qualitas Energy's team delivers across all the relevant aspects of the value chain including, development, construction, financing, operations, and energy management. To date, Qualitas Energy has an operational output of 585 MW of solar with a further 6.1 GW in development worldwide.

1.3 Definition of an EIA

- 1.3.1 The term 'Environmental Impact Assessment' ('EIA') describes a procedure that must be followed for certain types of projects before it can be given 'consent'. The procedure is a means of drawing together, in a systematic way, an assessment of a development'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 granting consent (the 'determining authority') before it makes its decision.

1.4 Requirement for EIA

- 1.4.1 The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, herein referred to as the EIA Regulations 2017, require that before consent is granted for certain types of development, known as 'EIA Development', an EIA must be undertaken. The EIA Regulations 2017 set out the types of development which must be subject to an EIA (referred to as Schedule 1 development) and other developments, which may be subject to an EIA depending on certain parameters and/or their potential to give rise to significant environmental effects (referred to as Schedule 2 development).
- 1.4.2 The Proposed Development does not fall under any of the types of development set out in Schedule 1 of the EIA Regulations 2017. However, the Proposed Development is of a type and scale described in Schedule 2 of the EIA Regulations 2017, as follows:
- “Energy industry*
- a) industrial installations for the production of electricity, steam and hot water (projects not included in Schedule 1 to these Regulations)”*
- 1.4.3 Regulation 5(2) of the EIA Regulations 2017 requires the Applicant to do one of the following where the development is considered to be an 'EIA Development':
- a) the submission by the applicant or appellant in relation to that development of a statement referred to by the applicant or appellant as an environmental statement for the purposes of these Regulations; or
- b) the adoption by the relevant planning authority of a screening opinion to the effect that the development is EIA development.
- 1.4.4 The Applicant recognises that without mitigation the Proposed Development is likely to give rise to some significant environmental effects. As such, the Applicant has decided to voluntarily undertake an EIA, in accordance with Part 2, Regulation 5(2)(a) of the EIA Regulations 2017. Consequently, a formal request for a Screening Opinion has not been made to NPTC or BCBC.

PLANNING CONTEXT

- 1.4.5 The Proposed Development is of a scale which currently would classify as a Development of National Significance (DNS) under the Planning (Wales) Act 2015 and the Developments of National Significance (Wales) Regulations 2016 (as amended), as it would constitute an electricity generating station with a capacity of between 10 MW and 350 MW. A DNS is a large infrastructure project in Wales that requires permission from Welsh Ministers (Planning and Environment Decisions Wales).
- 1.4.6 From the 15 December 2025, the DNS procedure will be revoked and replaced by the Infrastructure Consent (IC) procedure under the Infrastructure Wales Act 2024. At this point, the Proposed Development would fall below the thresholds of a Significant Infrastructure Project (SIP), given that the generating capacity would be less than 50 MW, and planning permission would need to be sought from the Local Planning Authority through a Town and Country Planning Application.

- 1.4.7 It is anticipated that the planning application, and accompanying Environmental Statement, would be submitted following the introduction of the IC procedure. Therefore, the Applicant is seeking a Scoping Opinion from NPTC and BCBC, rather than a Scoping Direction from PEDW. The Applicant has agreed this approach with PEDW through pre-application consultation.

1.5 Purpose of the Report

- 1.5.1 In accordance with Regulation 14 of the EIA Regulations 2017, a person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the scope and level of detail of the information to be provided in the ES. Therefore, this EIA Scoping Report has been prepared in accordance with Regulation 14(2) of the EIA Regulations 2017.
- 1.5.2 The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the key impacts likely to give rise to significant environmental effects, and to obtain agreement on the EIA approach and scope. As well as identifying matters to be considered in the EIA, this EIA Scoping Report also identifies those matters that are not considered necessary to assess further. This approach is in line with the general aim to undertake proportionate EIA, as advocated by industry best practice.
- 1.5.3 Whilst this report seeks to establish the overall framework for the EIA in relation to the environmental factors and associated effects, the exact scope of the EIA will be influenced by the Scoping Opinion received, the on-going design evolution of the Proposed Development, and through on-going baseline data collection (e.g. field surveys etc.). In this regard, a list of 'scoping questions' is presented within each environmental factor assessment table included within **Chapter 6** of this EIA Scoping Report. The aim of these scoping questions is to assist the determining authority and its consultees in forming the Scoping Opinion.
- 1.5.4 Where further evidence justifies a change to the scope of the EIA, this will be explained in the ES, along with confirmation of whether the change has been agreed with relevant consultees.
- 1.5.5 Table 1.1 sets out what information Regulation 14(2) of the EIA Regulations 2017 states that a request for a Scoping Opinion must include and where this information can be found in this EIA Scoping Report.

Table 1.1 Information required by the EIA Regulations 2017 to accompany a request for a Scoping Opinion

Information Required	Location within this Report
A plan sufficient to identify the land.	Appendix A
A brief description of the nature and purpose of the development, including its location and technical capacity.	Chapter 2
An explanation of the likely significant effects of the development on the environment.	Chapter 6
Such other information or representations as the person making the request may wish to provide or make.	See Table 1.2 for further details.

- 1.5.6 In addition to the requirements of the EIA Regulations 2017, the Applicant has chosen to provide the requirements specified in Appendix 2 of Welsh Government's 'Developments of National Significance: Procedural Guidance' (Welsh Government, 2024). **Table 1.2** sets out the information requirements and where this information can be found within this EIA Scoping Report.

Table 1.2 Information required by the development of national significance procedural guidance to accompany a request for a Scoping Opinion

Information Suggested	Location within this Report
An outline of the main alternatives considered and the reasons for selecting a preferred option	Chapter 3
Results of desktop and baseline studies where available	Chapters 5 and 6
A record of consultation undertaken with relevant bodies (including any public engagement) to date	Chapters 5 and 6
Referenced plans presented at an appropriate scale to convey clearly the information and all known aspects associated with the proposal	Appendix D
Guidance and best practice to be relied upon, and whether this has been agreed with the relevant bodies (for example the statutory nature conservation bodies or local authorities) together with copies of correspondence to support these agreements	Chapters 5 and 6
Methods used or proposed to be used to assess impacts and the significance criteria framework used	Appendix F
Any mitigation proposed and the extent to which these are likely to reduce impacts	Chapters 5 and 6
Where impacts from consequential or cumulative development have been identified, how applicants intend to assess these impacts in the Environmental Statement (for example, a high level assessment of the grid connection where this does not form part of the proposed development for a power station)	Chapters 6 and 7
An indication of any European designated nature conservation sites that are likely to be significantly affected by the proposed development and the nature of the likely significant impacts on these sites	Chapters 2 and 6
Key topics covered as part of applicants' scoping exercise	Chapter 4
An outline of the structure of the proposed Environmental Statement	Appendix F

- 1.5.7 In accordance with the EIA Regulations 2017, the Environmental Statement will be based on the Scoping Opinion received.

1.6 References

Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended). Available at: [The Town and Country Planning \(Environmental Impact Assessment\) \(Wales\) Regulations 2017](#)

Welsh Government. (December 2024, last updated May 2025). Development of National Significance Procedural Guidance: Appendix 2 – Environmental Impact Assessment. Available at: <https://www.gov.wales/developments-national-significance-dns-procedural-guidance-html#161704>

Welsh Government (2015) Planning (Wales) Act 2015 (as amended). Available at: <https://www.legislation.gov.uk/anaw/2015/4/contents>

2 DESCRIPTION OF THE NATURE AND PURPOSE OF THE PROPOSED DEVELOPMENT

2.1 Need for the Proposed Development

- 2.1.1 As a renewable energy project, the Proposed Development seeks to contribute to the significant capacity of low-carbon energy generation that is urgently needed in the UK. It would also contribute towards the achievement of Welsh and UK Governments' net zero targets, a move towards a UK energy supply that is secure, low carbon and low cost, as well as the international need to address climate change.
- 2.1.2 The Welsh Government approved a net zero target for 2050 and recognised renewable energy as a key component to achieving a reduction in greenhouse gas emissions (Welsh Government, 2022). In 2017, the Welsh Government announced a target of meeting 70% of Wales's electricity consumption from renewable electricity sources by 2030. This figure was updated in July 2023, and there is now a commitment to ensure that 100% of Wales' annual electricity consumption will come from renewable sources by 2035, and would continue to keep pace with consumption thereafter (Julie James MS, Minister for Climate Change, 2023).
- 2.1.3 Planning Policy Wales (Edition 12) (PPW) (Welsh Government, 2024) details the land use planning policies of the Welsh Government, with the objective to ensure the delivery of sustainable development. PPW identifies that low carbon electricity must become the main source of energy in Wales and recognises that *"transition to a low carbon economy not only brings opportunities for clean growth and quality jobs, but also has wider benefits of enhanced places to live and work, with clean air and water and improved health outcomes"*.
- 2.1.4 Low carbon solar generation, as would be delivered through the Proposed Development, is an essential step to meeting the Welsh Government's objectives to enable decarbonisation.
- 2.1.5 The Energy Generation in Wales 2023 report (published March 2025), which sets out the energy generation capacity in Wales at the end of 2023, estimates that Welsh renewable electricity generation is equivalent to 53% of Wales' current electricity consumption and to 27% of Wales' estimated 2035 electricity demand as electricity consumption is forecast to continue its rapid growth.
- 2.1.6 At present there is a total of 3.6 GW of renewable electricity capacity in Wales (11% (401 MW) of which is located in Neath Port Talbot), with ground mounted solar providing under 1 GW of that total. This solar generation capacity is contributing to the overall UK Government target of 70 GW of solar by 2050, needed to meet legally binding net zero targets. Enormous additional solar generation capacity is therefore urgently required to help tackle climate change.

2.2 Proposed Development Objectives

- 2.2.1 The Proposed Development will seek to fulfil the following objectives:
 - Generate renewable energy to help alleviate climate change and the social issues associated with this

- Contribute towards an independent, secure energy supply in the UK, which is particularly relevant given the current geopolitical climate
- Ensure lasting localised benefit and investment through delivery of a community benefit fund
- Deliver biodiversity net gains to provide an overall positive impact on local biodiversity
- Deliver placemaking benefits through an iterative design process which reflects local community and other key stakeholder feedback and a design which is sensitive to the Site's location and setting, and
- Enable the effective utilisation of this agricultural land, ensuring the landowner has a secure form of income (in parallel to traditional revenue streams) which can be reinvested back into the farm business.

2.3 The Site and Surrounding Area

SITE LOCATION

- 2.3.1 The Site location is shown in **Appendix A**. It comprises an 81-hectare area of farmland located approximately 220 metres (m) east of the M4 at junction 39, near Margam, Port Talbot, South Wales. The Site is on the plateau at Mynydd Margam (Margam Mountain).

SITE CONTEXT

- 2.3.2 The wider context of the Site includes areas of heavy industrial activity in the west, comprising TATA Steel works, as well as an evolving context of constructed and proposed renewable energy developments to the north and east. This includes the operational Margam Solar Farm and Mynydd Brombil Wind Farm, the proposed Y Bryn DNS wind farm and overhead lines and pylons providing grid connectivity.
- 2.3.3 There is a steep valley beyond the Site's northern boundary, leading down to Brombil Reservoir and the Mynydd Brombil Wind Farm turbines on the adjacent hilltop to the north. To the northeast of the Site is a harvested coniferous woodland, forestry owned and managed by NRW. Adjoining land to the south and north is a coniferous and native woodland which is understood - following discussion with NRW regarding its long-term management plans - to be proposed to be retained throughout the duration of the 40-year operation of the proposals. The Site's southern boundary is also defined by steep slopes, beyond which are neighbouring farms, access tracks and the Nant Cwmcaetreaharn watercourse. The western boundary is formed by a steep slope with thick planting (also managed by NRW, with confirmation of its retention) leading to the M4 and Port Talbot.
- 2.3.4 The nearest large settlements are Port Talbot, approximately 250 m east of the Site and Maesteg, approximately 750 m south-east of the Site. Smaller settlements nearby include Eglwys Nunydd, Coed Hirwaun and Goytre located east of the M4 along the B4238, A48 and Dyffryn/Goytre Road respectively.

SITE DESCRIPTION

- 2.3.5 For the purpose of this report, the Site is described in two parts:
- The access track, which is the existing Natural Resources Wales (NRW) forestry track connecting to the B4282; and

- The main development area, which is the area of the Site on which erection of solar panels and associated development, including habitat enhancement, is proposed.

Access Track

- 2.3.6 The access track is an existing 5.5 km stretch of permanent stone track, up to 10 m in width, which is routed through the NRW commercial forestry area of Margam Forest. The track is currently used by NRW for haulage of Margam Forest timber.
- 2.3.7 The access track starts at a junction with the B4282, crosses the Maesteg Golf course as the Heol Y Moch, before continuing on the Ffordd y Frenhines which connects to a section of track located to the immediate north of the main development area.
- 2.3.8 The track has varying topography with a maximum elevation of approximately 340 m above ordnance datum (AOD) and a minimum elevation of approximately 225 m AOD.
- 2.3.9 Public footpaths are located along the entire length of the proposed access track from the B4282 to the main development area.

Main Development Area

- 2.3.10 Land cover within the main development area consists mainly of agricultural fields, currently used for sheep grazing. As shown on the Existing Site Plan in **Appendix B**, there are 16 upper fields in the central and eastern portion of the main development area, which are agricultural and separated by field boundaries and associated bracken vegetation (perennial) approximately 1 m high. In the western portion of the main development area are a further five lower fields (fields 17 to 21), which comprise grass and scrub vegetation. A set of National Grid overhead lines (OHL) crosses the west of the main development area, with a pylon located in field 17.
- 2.3.11 The topography of the main development area generally slopes from the north-east towards the south-west with the highest part of the Site located in the east of the main development area. The maximum elevation is 341 m above ordnance datum (AOD) in the east and reaches a minimum elevation of 114 m AOD in the west. The topography flattens out towards the centre of the main development area where the elevation plateaus before continuing to slope towards the south-west.
- 2.3.12 As discussed in paragraph 2.3.3, the main development area's northern boundary is marked by a steep valley sloping north/north-west. The southern boundary of the main development area is also defined by steep topography sloping south-west, beyond which are the neighbouring farms Crugwyllt-Fach Farm and Cwm-Maelwg Farm.
- 2.3.13 Existing vehicular access to the main development area is limited to private farming tracks from the Crugwyllt-Fawr Farm. However, a number of pedestrian footpaths (Public Rights of Way) are present within and adjacent to the main development area, as shown in **Appendix B**. The Wales Coastal Path runs along the western boundary of the main development area and is also shown in **Appendix B**.
- 2.3.14 The footpaths routed along the entire proposed access track continue through the main development area to bisect the area centrally. Through the central portion of the main development area, this central footpath is flanked on both sides by a dry stone wall, earth mounds and bracken vegetation.
- 2.3.15 As shown in **Appendix B**, a further footpath enters the main development area from the NRW woodland to the northeast and connects with the central footpath. Within

the western portion of the main development area, the central footpath connects with footpaths which traverse the Site in a roughly north-south route.

- 2.3.16 The main development area is surrounded by forestry owned by NRW on the northern, south-eastern and eastern boundaries. The northern boundary is formed by areas of coniferous woodland used for commercial forestry. To the south-east the main development area is enclosed by retained native coniferous woodland with areas of ancient woodland. The western boundary is characterised by Graig Fawr ancient semi-natural woodland owned by the Woodland Trust.

SITE DESIGNATIONS

- 2.3.17 The Site boundary and environmental designations are illustrated in **Appendix C**.
- 2.3.18 The Site is not located within a nationally designated landscape. The Bannau Brycheiniog (Brecon Beacons) National Park (BBNP) boundary lies approximately 23 kilometres (km) to the north of the main development area and 18 km north of the access track. The Gower Area of Outstanding Natural Beauty (AONB) lies over 15 km to the west of the Site. The Site is entirely located within the Margam Special Landscape Area (SLA). SLAs are non-statutory designations applied by the local planning authority to define areas of high landscape importance within their administrative boundary. Margam SLA is a landscape which is accessible to the public and has considerable cultural value that has influenced the development of the landscape as, “... a well-preserved landscape of enclosed upland, untouched by modern forestry plantation.” Scenic quality is described as moderate, with “strong, simple, pleasant patterns with simple landscape features”
- 2.3.19 The nearest Registered Park and Garden is that of Margam Park, located approximately 560 m south of the Site. The Talbot Memorial Park Registered Park and Garden is also located approximately 2.5 km north-west of the Site. The Site is entirely located within the Margam Mountain Registered Historic Landscape of Special Interest, which is designated as a distinctive block of South Wales uplands on the south west fringe of the Glamorgan Blaenau (uplands), which overlooks and visually dominates the narrow coastal plain near the modern port and industrial town of Port Talbot.
- 2.3.20 There are 26 Listed Buildings within 1 km of the main development area and an additional one Listed Building within 1 km of the access track. These include a cluster of 19 within Margam Park Registered Park and Garden, of which four are Grade I Listed Buildings: Ivy Cottage including Facade of Former Banqueting House (14153), St Mary's Abbey Church (14148), Margam Orangery (14152), and Ruins of Chapter House and Vestibule of St Mary's Abbey (14149).
- 2.3.21 Scheduled Monument Chain Home Low Radar Station, Margam (GM488) sits on the western Site boundary. There are seven other Scheduled Monuments within 1 km of the main development area:
- Half Moon Camp (GM477), approximately 465 m to the south-east
 - Margam Medieval Bath House (GM545), approximately 505 m to the south-east
 - Hen Eglwys Chapel and Defended Enclosure (GM163), approximately 680 m to the south-east
 - Mynydd y Castell Camp (GM162), approximately 715 m to the south
 - Ergyd Uchaf Round Barrow (GM159), approximately 750 m to the north
 - Margam Inscribed & Sculptured Stones (GM011), approximately 870 m to the south-east, and

- Margam Abbey (GM005), approximately 920 m to the south-east.
- 2.3.22 There are a further three Scheduled Monuments within 1 km of the access track, comprising:
- Site of Bodvoc Stone (GM443), approximately 675 m to the south
 - Twmpath Diwlith Round Barrow (GM557), approximately 780 m to the south, and
 - Y Bwlwarcu (GM059), approximately 850 m to the south.
- 2.3.23 There are no Sites of Special Scientific interest (SSSI), Special Areas of Conservation (SAC) or National Nature Reserves within or adjacent to the Site. The closest SSSI is Eglwys Nunydd Reservoir SSSI located approximately 1.2 km south of the Site. Margam Moors SSSI is located approximately 2 km south-west of the Site. The Kenfig Pool and Dunes National Nature Reserve, Cynffig / Kenfig SSSI and SAC are located approximately 3.5 km south-west of the Site.
- 2.3.24 There are three small unnamed watercourses within the Site. One is located close to the south-eastern Site boundary (along the boundary between fields 11 and 12 as shown in **Appendix B**). The other two are located close to the western Site boundary (along the boundaries between field 17 and fields 20 and 21 as shown in **Appendix B**) and join before exiting the Site boundary. Once joined, they form a tributary of the Arnallt Brook, which conveys flow east into the Brombil Reservoir. The majority of the Site is not at risk for flooding, however, a few small areas in the north-east and north-west of the Site are within Flood Zones 2 and 3 for Flood Risk from Surface Water and Small Watercourses.
- 2.3.25 Based on the Predictive Agricultural Land Classification (ALC) mapping (DataMapWales, 2019), the majority of the Site is classed as Grade 4 (poor quality agricultural land) with areas of Grade 3b (moderate quality agricultural land) to the west and is therefore not considered Best and Most Versatile (BMV) agricultural land, as defined by PPW. There is a small area of Grade 3a (good to moderate quality agricultural land) close to the western Site boundary. The Welsh Government's Land Quality Advisory Service (LQAS) was consulted via email and confirmed on the 23 June 2025 their agreement that the Site does not contain BMV land and would not require a detailed field survey.

2.4 Proposed Development Description

SITE ACCESS

- 2.4.1 Access to the Site is proposed via the existing NRW forestry track. The access junction would be from the B4282, near to Maesteg Golf course.

PROPOSED DEVELOPMENT ELEMENTS

- 2.4.2 The Proposed Development comprises the construction, operation and decommissioning of the following elements:
- Solar Photovoltaic (PV) modules
 - Inverters
 - Transformer Stations
 - Distribution Network Operator (DNO) and Customer 132kV Substation including:
 - Customer Control Room
 - Distribution Network Operators (DNO) Control Room

- Telecommunications Tower
 - Customer Compound, and
 - DNO Compound including Switchgear House.
 - Cabling
 - CCTV and Fencing
 - Internal Access Tracks, and
 - Landscaping and Biodiversity Enhancements.
- 2.4.3 An indicative layout plan has been produced to illustrate the proposed location of the key components of the Proposed Development. This is presented in **Appendix D**.
- 2.4.4 The Proposed Development is expected to have a total export capacity of approximately 40 megawatts alternating current (MW ac). The estimated energy production would be equivalent to meeting the electrical needs of approximately 10,770 homes, which is more than half of the homes in Port Talbot.
- 2.4.5 In addition to those elements set out in paragraph 2.4.2, the Proposed Development would also require some temporary elements during the construction and decommissioning phases, such as a temporary construction compound and satellite storage areas for panels (see paragraph 2.5.4).

SOLAR PV MODULES

- 2.4.6 Solar panels generate electrical power by using a solar PV module to convert sun light into direct current (dc) electricity. Individual solar PV modules, more commonly known as solar panels, contain several PV cells wired and encapsulated by tempered glass. Solar PV modules are sealed for weatherproofing and held together by a metal frame in a mountable unit.
- 2.4.7 The frame will be built from galvanised steel or aluminium. The Solar arrays will be arranged in rows with gaps of approximately 2 m – 6 m between each row.
- 2.4.8 It is expected that the solar PV modules would be angled at a slope of around 20-25 degrees from horizontal to optimise daylight absorption. The mounting structures will be supported by framework posts, pile driven approximately 1.5 m below ground level. Once attached to the mounting structure, the minimum height of the lowest part of the solar PV modules will be approximately 80 centimetres (cm) above ground level (AGL) and the maximum height of the solar PV modules will be up to 3 m AGL. The maximum and minimum height dimensions are indicative at this stage as the final elevation of the solar PV modules will be influenced by design factors such as local topography, the solar PV module type, configuration and mitigation proposals.

ON-SITE SUPPORTING EQUIPMENT

- 2.4.9 A range of equipment is required to support the solar PV modules in order to convert the power generated and to allow its export to the electricity supply and transmission system. These on-site supporting elements and their functions are as follows:
- **Inverters:** Inverters convert the direct current (DC) generated by the solar PV modules into alternating current (AC) that can be exported to the National Grid. Inverters are sized to cope with the characteristics of the DC electricity that is output from the solar PV modules. String inverters are typically small enough to be mounted underneath the modules; and
 - **Transformer stations:** Transformers monitor, increase and control the voltage of the electricity generated across the Site before it reaches the on-site substation. The transformer stations would be located adjacent to the inverters.

They would have a maximum height of 3 m and are anticipated to be finished in green or white.

SUBSTATION AND SUBSTATION / DNO COMPOUND

- 2.4.10 The substation compound area comprises the DNO and customer substation compounds. The compound is proposed to be located in the west of the Site, within the lower fields (field 17).
- 2.4.11 An on-site 132 kV substation would be required for the Proposed Development to connect the solar PV module areas to distribution and transmission networks. The dimensions of the Customer Substation Compound are anticipated to be 37 m x 26 m.
- 2.4.12 The dimensions of the DNO substation compound are anticipated to be 54.5 m x 53.5 m. The DNO control room will comprise a container approximately 12 m x 2.5 m and will include the DNO's operational control equipment (monitoring and maintenance).

SWITCHGEAR HOUSE AND CUSTOMER CONTROL ROOM

- 2.4.13 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 maintenance and to clear faults downstream. The control room will house the customer's control equipment.
- 2.4.14 The Switchgear House and Customer Control Room will be housed within a 12 m x 2.5 m container within the substation compound area (field 17). The container is likely to be dark green in colour.

CABLING

- 2.4.15 Underground cables would be required to connect the solar PV modules to the on-site transformers, switchgear, and substation.
- 2.4.16 At this stage, it is anticipated that underground cables would be installed using a cable plough, wherever possible. This is considered to be the most efficient and least impactful method of cable installation, causing minimal disruption to the ground by cutting, installing and back-filling in one operation.

CCTV AND FENCING

- 2.4.17 Column mounted closed-circuit television (CCTV) systems are proposed to be installed around the perimeter of the main development area and at the corners of the substation compound.
- 2.4.18 Security fencing (comprising deer fencing at a height of 2.4 m) would enclose the main development area and would be gated to allow access to and from the Proposed Development. Galvanised fencing (also at a height of 2.4 m) with access gates would be installed around the perimeter of the substation compound.

TELECOMMUNICATIONS TOWER

- 2.4.19 A 15 m telecommunications tower will be required to be constructed onsite to accommodate the Proposed Development's telecommunications equipment. The telecommunications tower will be connected to an existing tower in the west of the Site, and will be located within the substation compound area within the lower fields (field 17).

INTERNAL ACCESS TRACKS

- 2.4.20 The Proposed Development will require compacted crushed stone to construct the new access tracks within the main development area. The new internal access tracks

are anticipated to be approximately 3.5 m – 5 m wide. It is currently anticipated that the track would be routed centrally within the Site, offset from the existing footpath.

LANDSCAPING AND BIODIVERSITY ENHANCEMENTS

- 2.4.21 The landscaping and biodiversity enhancements of the Proposed Development include the establishment of a Habitat Management Area of approximately 8 ha in the west of the Site, within the lower fields (fields 17 to 21).
- 2.4.22 Additional landscaping and biodiversity mitigation and enhancement features would be located throughout the main development area, as informed by further assessment works and further engagement with relevant stakeholders.

2.5 Construction Phase

CONSTRUCTION PROGRAMME

- 2.5.1 Subject to the planning application being granted, it is anticipated that construction could start in 2027 and would require an estimated 12 months. Therefore, commissioning and energisation of the Proposed Development is assumed to be 2028.

CONSTRUCTION LOGISTICS

- 2.5.2 Construction is proposed to take place within the following hours:
 - Mon – Fri 08.00 – 18.00
 - Sat 08.00 – 13.30
 - No construction on Sundays and Bank Holidays
- 2.5.3 The number of site operatives would fluctuate throughout the construction programme, however during the peak period it is anticipated that there would be 60-70 workers on Site.

TEMPORARY CONSTRUCTION COMPOUND

- 2.5.4 The construction works would require one temporary construction compound located in the north-east of the main development area (field 9), near to the proposed connection with the existing track. The construction compound would likely include temporary cabins to be used for the Site offices (including welfare facilities for site staff); parking for construction staff, visitors and construction vehicles; secure storage for tools, plant and machinery; waste storage areas; and security fencing and CCTV around the compound. There would be satellite storage areas for panels located in each solar field.

CONSTRUCTION TRAFFIC AND SITE ACCESS

- 2.5.5 The route to the Site is proposed to be from the M4, at Junction 40 via Cwmafan, B4282, Bryn and then into the Site at the existing NRW access junction at Maesteg Golf Club. Once within the Site, construction vehicles would continue along the existing NRW track to the main development area. The construction route from the M4 to the Site is illustrated on the Proposed Construction Route Plan in **Appendix E**.
- 2.5.6 The same route would be used for the delivery of the abnormal indivisible load (required to transport the substation), subject to the suitability of these roads to accept the abnormal load, which will be assessed as part of the forthcoming planning application.

- 2.5.7 Many of the roads around the Site are currently accessible by farm machinery and agriculture/forestry-related HGVs. The proposed route to the Site has previously been used for the delivery of abnormal loads associated with construction of the now operational Mynydd Brombil wind farm and is therefore likely to be adequate for construction traffic associated with the Proposed Development. However, the need for road upgrades, road widening, for example for abnormal loads or to ensure visibility splays at Site access/egress points are appropriate will be determined as the Proposed Development design develops.
- 2.5.8 The number of construction trips will be confirmed and assessed as part of the Outline Construction Traffic Management Plan, which will be developed and submitted to accompany the application.

2.6 Operation Phase

- 2.6.1 The design life of the Proposed Development is expected to be up to 40 years.
- 2.6.2 During the operation phase of the Proposed Development, on-site activities would be limited and restricted to maintenance activities and sheep grazing. Monthly inspections will be carried out and access will use the existing NRW forestry track and the internal access tracks within the main development area. Maintenance activities are likely to include:
- Visual inspection of all infrastructure;
 - 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 solar modules or other components, if damaged;
 - Delivery of spare parts, replacement equipment items and consumables;
 - Water management (e.g., clearing of drainage ditches); and
 - Habitat management (e.g., cut back of grass, hedges, trees).
- 2.6.3 It is anticipated that one to two maintenance visits per month would be required. Typically, this would be completed by a transit-style van.

2.7 Decommissioning Phase

- 2.7.1 Following operation, the Proposed Development would require decommissioning. The process of decommissioning would involve the removal of all solar infrastructure, including the solar PV modules and on-site supporting equipment, from the Site to be recycled or disposed of in accordance with industry best practices at that time. It is anticipated at this stage that underground cabling would be left in situ to avoid unnecessary ground disturbance.
- 2.7.2 The Site would be returned to its original use

3 REASONABLE ALTERNATIVES CONSIDERED

3.1 Introduction

- 3.1.1 Regulation 17(3)(d) of the EIA Regulations states that an Environmental Statement should include:

“a description of the reasonable alternatives 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 the option chosen, taking into account the significant effects of the development on the environment”

- 3.1.2 Although subject to a planning application under the Town and Country Planning Application regulations, planning guidance from other consents regimes can inform good practice when writing an ES. Section 9.3 of the Planning Inspectorate’s Advice Note Seven states that a good Environmental Statement is one that ‘*explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment*’.

- 3.1.3 The Environmental Statement will therefore include a description of the reasonable alternatives that have been considered, including a clear narrative on the main reasons for selecting the chosen option, including an explanation of how environmental effects have been taken into account.

- 3.1.4 The reasonable alternatives assessment will focus on:

- Design layouts/opportunities within the Site and
- The sizing and scale of infrastructure, and where relevant alternative technologies e.g, equipment specification.

- 3.1.5 A ‘no development’ alternative would not deliver the additional electricity generation capacity associated with the Proposed Development and therefore will not be considered further.

- 3.1.6 The consideration of alternatives and design evolution will be undertaken with the aim of avoiding and/or reducing significant adverse environmental effects, maintaining operational efficiency and cost-effective design solutions, and with consideration of other relevant matters such as available land and planning policy. This will be aided by the implementation of project design principles which will help guide the design of the Proposed Development.

3.2 Site Selection

- 3.2.1 The location has been identified by the Applicant as suitable for renewable energy development through initial site appraisal and negotiation with the landowners. In particular, the Site has been carefully selected and identified as a suitable location for solar development taking into consideration the following environmental and technical factors:

- Good irradiance
- The grid network operator confirms there is sufficient grid capacity in the locality to receive all of the electricity generated by the Proposed Development.

- The point of connection to the grid network is onsite, meaning the Site can produce clean solar energy without the need to construct new pylons and overhead lines or any other off-site grid transmission infrastructure.
 - There are a low number of residential properties near the main development area, ensuring amenity impacts (noise and views of the Proposed Development from dwellings) are kept to a minimum.
 - The Site is enclosed by mature forestry which offers screening and reduced visibility of the Site from nearby receptors.
 - The Site does not comprise Best and Most Versatile (BMV) Agricultural Land – it is Grade 3b and 4 as confirmed in the submitted plan.
 - The Site does not fall within an area susceptible or at risk of flooding.
 - The Site is not within a national landscape or ecological designation.
 - The Site's elevated nature and access via the NRW forestry also makes it easier to access compared with other sites in the surrounding context.
- 3.2.2 On the basis that the proposals specifically relate to this Site, alternative sites will not be considered within the ES.

3.3 Alternatives Studied to Date

- 3.3.1 The design development work undertaken to date has considered alternatives in the context of minimising the potential for adverse environmental effects, maximising opportunities for enhancement, maintaining operational efficiency and cost-effective design solutions, and other relevant matters such as planning policy and land ownership requirements.
- 3.3.2 This has included identifying key receptors at the Site (and in close proximity to the Site) which are relevant to the type of infrastructure being proposed, as presented in **Appendix C**. This type of 'constraints analysis' is an invaluable tool in decision making and can help 'avoid' and 'reduce' potential impacts on environmental, engineering, and technical receptors from the outset of the design process.
- 3.3.3 Information to inform this work has been drawn from publicly accessible datasets, site surveys, desk-based research, consultation with the landowner, and consultation with utility providers.
- 3.3.4 As such the Indicative Site Layout (**Appendix D**) has been informed by preliminary environmental assessments and the collated information on the Site and its surroundings. This design work has identified the locations within the Site which are considered to be more constrained, and those which are considered to be less constrained and potentially suitable for development.
- 3.3.5 One such example of this, is the inclusion of the primary mitigation and enhancement area in fields 18 to 21. This area was set aside for habitat and landscape planting during early design development to secure a net benefit for biodiversity within the Site and minimise views of solar infrastructure from nearby residential receptors.
- 3.3.6 Although solar panels are proposed on fields 1 to 16, the extent of the panels will be refined through further environmental assessment and liaison. This process is ongoing and to date has primarily been based on the initial landscape, visual, heritage and biodiversity appraisals. Consideration has been given to how the Proposed Development could affect on-site and off-site receptors. Key on-site receptors include habitats and users of the PRowS. Key off-site receptors include the Wales Coastal Path and associated Chain Holme Low Radar Scheduled Monument, Margam Park and Ogwr Ridgeway Walk.

- 3.3.7 Consideration has also been given to the potential need to divert the central footpath through the Site, however this was concluded to likely disrupt the established field patterns, the stone wall which lines sections of the footpath, a non-designated historic road (which follows the route of the footpath) and detract from the users of the PRow experience. Instead, the emerging design will focus on retaining the alignment of the footpath, field patterns and stone wall and enhancing these where possible.
- 3.3.8 Another key focus of the design work to date has been the Applicant's objective of placemaking. PPW is framed by the Wellbeing of Future Generations Act, which places the direction for 'People and Places: Achieving Well-being Through Placemaking'. In this context, placemaking is a holistic approach to the planning and design of development and spaces that focuses on positive outcomes. This means thinking beyond minimum policy compliance to consider opportunities arising from the context of the development and the Site itself as well as planning constraints. The Applicant's initial placemaking considerations are identified within the Opportunities Plan in **Appendix G**.
- 3.3.9 Other alternatives considered to date relate to suitable site access points and alternative access routes. The Proposed Development would require an abnormal indivisible load (AIL) delivery and therefore the accessibility of the Site is a key consideration.
- 3.3.10 Access from the existing farm track from the south of the Site is not suitable due to the narrow and steep nature of this track. Additionally, the presence of ancient woodland adjacent to the road would limit the suitability of any localised widening. Consequently, two alternative access routes, utilising existing NRW routes have been considered:
- Access Option 1 (the proposed access route) was a 5.5 km long stretch of existing track which terminated on the B4282 Neath Road near to the Maesteg Golf Course; and
 - Access Option 2 was a 7.2 km long stretch of existing track which terminated on the B4282 Neath Road within Bryn.
- 3.3.11 **Table 3.1** sets out a high-level assessment completed for the two access options.

Table 3.1 Environmental Comparison of Access Options

Environmental considerations	Access Option 1	Access Option 2
Residential properties	As with access option 2, the vehicular route would pass through the settlements of Cwmafan and Bryn. However, as the access junction from the B4282 into the Site is not within a settlement, transport and visual amenity effects would likely be of a lesser scale than those associated with access option 2.	As with access option 1 the vehicular route would pass through the settlements of Cwmafan and Bryn. The access junction from the B4282 would be located within the settlement of Bryn and therefore, vehicle movements and visual amenity effects may appear more apparent when compared to access option 1.
Statutory designations	As with access option 2, the route would be located within a registered historic	As with access option 1, the route would be located within a registered historic

	landscape and special landscape area. However, as the tracks are existing and no changes are anticipated to be required, environmental effects are not anticipated.	landscape and special landscape area. However, as the tracks are existing and no changes are anticipated to be required, environmental effects are not anticipated. Grade II listed Jerusalem Baptist Chapel is located within 500 m of the access, within the settlement of Bryn.
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- 3.3.12 As demonstrated in Table 3.1, the likely environmental effects for the two options are relatively similar, with access option 1 slightly preferred from an environmental perspective. Additionally, the Applicant understands that the access track has been utilised previously for the delivery of abnormal loads required in the construction of nearby operational windfarm Mynydd Brombil, and is used on an ongoing basis by existing logging operations. Consequently, Option 1 has been taken forwards in the Proposed Development design.
- 3.3.13 As demonstrated in this Chapter, through the alternatives and design evolution work undertaken to date, the Applicant is seeking to ensure the final design is sensitive to the Site's environmental context and maximises placemaking. The final Proposed Development design, which will be the subject of the assessments reported in the Environmental Statement, will be the result of an iterative design process. The reasonable alternatives studied by the applicant and the chosen option, will be discussed in the Environmental Statement.

3.4 References

Planning Inspectorate (2020, Updated March 2025). Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. Available at: <https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an>

4 APPROACH TO THE EIA

4.1 Introduction

- 4.1.1 This chapter sets out the overall approach that will be taken to the EIA for the Proposed Development.
- 4.1.2 The Environmental Statement will contain the information specified in Schedule 4 of the EIA Regulations 2017. The approach to the assessment has been informed by current best practice guidance.
- 4.1.3 An overview of the guidance and methodology adopted for each environmental factor is provided within the respective environmental factor chapters (Chapter 6) of this EIA Scoping Report.

4.2 Factors Considered in this EIA Scoping Report

- 4.2.1 The environmental factors listed under Regulation 4(2) of the EIA Regulations 2017 are presented below.
 - Population and human health
 - Biodiversity
 - Land and soil (factors combined for the purposes of reporting)
 - Water
 - Air Quality
 - Climate
 - Material assets
 - Cultural heritage, and
 - Landscape and Visual.
- 4.2.2 It should be noted that although not listed as specific environmental ‘factors’ under Regulation 4(2) of the EIA Regulations 2017, the following are also considered within this EIA Scoping Report:
 - Noise and vibration
 - Traffic and transport
 - Major accidents and disasters, and
 - Heat and radiation.
- 4.2.3 The proposed structure of the Environmental Statement is set out in **Appendix F**.

4.3 Consultation

- 4.3.1 Consultation alongside the EIA process is critical to the development of a comprehensive and proportionate ES. 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 is required.
- 4.3.2 Ongoing consultation enables embedded and additional mitigation measures to be incorporated into the Proposed Development to limit adverse environmental effects and optimise 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 inform the evolving design.

- 4.3.3 As part of the EIA process, consultation will be undertaken with a range of statutory and non-statutory consultees as directed by NPTC and BCBC. Further consultation will also be undertaken where required to brief consultees on the Proposed Development, seek feedback on the approach to assessment, and obtain baseline data. A summary of consultation will be included within the introductory sections of the Environmental Statement and subject matter specific consultation will be summarised within the individual technical chapters.

4.4 General Difficulties and Uncertainties

- 4.4.1 Factor specific difficulties and uncertainties are set out in the relevant sections of this EIA Scoping Report. The following key general difficulties and uncertainties apply to a number of factors:

- As the precise location and quantity of the components that the Proposed Development comprises are not yet fixed, there is potential for uncertainty regarding the scope of assessment for each factor. However, the scoping exercise has been based on the 'worst case scenario' to ensure that all potential significant environmental effects are considered e.g, scoping assessments have assumed the maximum height of solar panels would be 3 m and this will not be exceeded.
- Data from third parties relied upon for the baseline against which any effects will be assessed could potentially be out of date or inaccurate. Any such data will be procured from reputational and industry standard sources. It will be reviewed and used by competent and experienced professional experts. The period of validity for each set of baseline data collected will be set out in the Environmental Statement and, where appropriate, the requirement for any repeat surveys will be specified, such as for species data.
- It may be necessary to collect data in the area surrounding the Site. Where it is not possible to access private land, data will be collected from publicly accessible land only.

4.5 Temporal Scope, Assessment Phases and Scenarios

- 4.5.1 The Proposed Development comprises three phases:

- Construction Phase;
- Operation Phase; and
- Decommissioning Phase.

- 4.5.2 For the majority of the factor assessments, it will be appropriate to assess all three phases of the Proposed Development's life. Therefore, the assessment scenarios that are being considered for the purposes of the EIA are as follows:

- Baseline scenario (Existing or Future);
 - Existing baseline without Proposed Development – Reported at the time that the baseline data has been collected.
 - Future baseline without the Proposed Development – Utilising the existing baseline data and forecasting the likely evolution for a selected future year.

- Baseline + Proposed Development – Assessing the construction phase, operational phase and decommissioning phases as appropriate; and
 - Baseline + Proposed Development + Cumulative Developments – Assessing the construction phase, operational phase and decommissioning phases of multiple developments (including the Proposed Development) as appropriate¹.
- 4.5.3 These constitute the main assessment scenarios that will be considered within the ES. However, individual factor assessments may also consider further scenarios, where this is necessary to ensure compliance with their industry specific assessment guidance. For example, the landscape and visual assessment proposes to assess two operational phase scenarios; opening year, and a future year 10 years following the opening year, where any vegetation planting would have matured.
- 4.5.4 It is currently envisaged that the construction of the Proposed Development would take place over a 12-month period. The Proposed Development is anticipated to be operational for 40 years and decommissioning is anticipated to take five to six months.

4.6 Defining the Study Area

- 4.6.1 Study areas have been defined individually for each environmental factor, taking into account the geographic scope of the potential impacts relevant to that factor and the information required to assess those impacts. The proposed study areas are described within each environmental factor assessment table within **Chapter 6**.

4.7 Establishing Baseline Conditions

- 4.7.1 Likely significant environmental effects of the Proposed Development will be described in the Environmental Statement in relation to the extent of changes to the existing baseline environment as a result of the construction, operation and decommissioning of the Proposed Development.
- 4.7.2 The baseline environment will comprise the existing environmental characteristics and conditions, based upon desk-top studies, field surveys undertaken and information available at the time of the assessment.
- 4.7.3 Baseline conditions will be established by:
- Site visits and surveys
 - Desk based studies, and
 - Modelling.
- 4.7.4 The baseline conditions for each environmental factor assessment will be set out within the respective assessment chapters of the ES. The baseline conditions relevant to the individual factor assessments which are currently known are presented in **Chapters 5 and 6**.
- 4.7.5 As stated above in **Section 4.4**, there is potential that data obtained from third parties is not up to date. The origin of all third-party data used will be clearly identified, alongside any difficulties, uncertainties and assumptions.

¹ Effects relating to this assessment scenario are generally additive, meaning they increase the overall environmental effect on receptors beyond what any single project would cause.

- 4.7.6 Baseline data, which is deemed to be confidential in nature, such as that relating to protected species, will be provided in separate confidential appendices to the ES, due to the sensitivity of such species records.

4.8 Establishing Future Baseline Conditions

- 4.8.1 Schedule 4(3) of the EIA Regulations 2017 requires consideration of the likely evolution of the current state of the environment (baseline scenario) in the absence of the Proposed Development, as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge (the 'future baseline'). Whilst there are considerable limitations to the predictions that can be made about natural baseline conditions at a future point in time, reasonable effort will be made to characterise the future baseline in the absence of the Proposed Development in each environmental factor assessment. In addition, some assessments require projections to account for future change, such as traffic growth within the assessment of likely significant effects associated with the Proposed Development.

4.9 Approach to Mitigation

- 4.9.1 Mitigation can be relied on to reduce any potential significant effects from the Proposed Development. The sequential steps of the mitigation hierarchy are as follows:
- Avoidance – take measures to avoid creating impacts from the outset
 - Minimisation – measure taken to reduce the duration, intensity and extent of the impact if they cannot be avoided
 - Restoration – measures taken to improve ecosystems following exposure to unavoidable impacts, and
 - Offset – measure taken to compensate for any residual impacts.
- 4.9.2 The Institute of Environmental Management and Assessment's (IEMA) (now the Institute of Sustainability and Environmental Professionals) 'Environmental Impact Assessment Guide to Shaping Quality Development'² refers to three distinct forms of mitigation:
- Primary – an intrinsic part of the project design
 - Secondary – typically described within the factor chapters of the Environmental Statement but often are secured through planning conditions and/or management plans.
 - Tertiary – required regardless of any EIA, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices.
- 4.9.3 For the purposes of this EIA Scoping Report and the Environmental Statement, embedded 'primary' mitigation measures will form part of the Proposed Development for which development consent is sought. **Table 4.1** describes the currently known embedded (primary) environmental mitigation measures that are considered to be an inherent part of the Proposed Development i.e. the project design principles adopted to avoid or prevent adverse environmental effects, based on the design of the Proposed Development to date. It should be noted that these will evolve over the

² IEMA (2015) Environmental Impact Assessment Guide to Shaping Quality Development

course of the design, up to submission of the application. **Appendix G** illustrates the opportunities currently being considered as part of the design evolution process.

Table 4.1 Embedded (primary) environmental mitigation measures

Environmental Factor to which the Embedded Mitigation Relates	Embedded (Primary) Environmental Mitigation Measure and Associated Benefit
Biodiversity	The Proposed Development will avoid any development on areas of known priority habitat.
Biodiversity and Landscape	Where possible, existing hedgerows, trees, woodland, ditches and field margins will be retained. Any breaks or crossings (associated new tracks, security fencing and/or cable routes) will be designed to use existing agricultural tracks between fields where possible, and the width of any breaches will be kept to a minimum. A 6 m buffer from hedges to panels will be retained within the design. While not a primary mitigation measures, it is also noted that hedgerows within the Site will be enhanced where possible.
Biodiversity and Water	The Proposed Development design will incorporate a minimum offset distance of 10 m from all watercourses and ditches.
Heritage, Transport and Population	All Public Rights of Way within the Site boundary will be retained. A minimum offset of 10 m from the Public Rights of Way to the deer fencing surrounding solar fields will be incorporated into the design. Greater distances will be incorporated where stone walls exist along the central footpath.
Heritage	The stone wall which borders the on-site PRow through the centre of the Site will be retained (see below). 

- 4.9.4 These embedded (primary) environmental mitigation measures should not be confused with additional (secondary and tertiary) mitigation measures proposed in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment, which are described under the 'Additional (Secondary and Tertiary) Mitigation Measures' section within each environmental factor assessment table (**Chapter 6**).

4.10 Assessment of likely significant effects

- 4.10.1 The Environmental Statement will report on the likely significant environmental effects for the Site preparation, earthworks and installation (hereafter referred to as 'construction'), operation (i.e., once completed and open to use), and decommissioning (i.e., once the development has reached its end of life) phases of the Proposed Development.
- 4.10.2 Typically, the following criteria will be taken into account when determining significance:
- The receptors/resources (natural and human) which would be affected and the pathways for such effects;
 - The geographic importance, sensitivity or value of receptors/resources;
 - The duration (short-term, medium-term or long-term); permanence (permanent or temporary) and changes in significance (increase or decrease);
 - Reversibility - e.g. is the change reversible or irreversible, permanent or temporary;
 - Environmental and health standards (e.g. local air quality standards) being threatened; and
 - Feasibility and mechanisms for delivering mitigating measures, e.g. Is there evidence of the ability to legally deliver the environmental assumptions which are the basis for the assessment?
- 4.10.3 The method for assessing significance of effects varies between environmental factors but, in principle, will be based on the environmental sensitivity (or value/importance) of a receptor/resource and the magnitude of change from the baseline conditions. The approach to assessing the significance of effects for each individual factor is outlined within each environmental factor assessment table in **Chapter 6 and Appendix H** of this EIA Scoping Report.
- 4.10.4 Summary of effect tables that summarise the likely significant effects associated with each of the environmental factors will be provided in the Environmental Statement. These tables will outline sensitive receptors, additional mitigation measures and residual effects. A distinction will be made between direct, indirect, secondary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects. Cumulative effects will be considered as a single coordinated assessment.

4.11 Opportunities for Enhancing the Environment

- 4.11.1 Where possible, there will be a commitment to identifying opportunities for enhancement within the relevant environmental factor assessments. Enhancement is defined as '*a measure that is over and above what is required to mitigate the adverse effects of a project*'. Therefore, any identified enhancement measures will not be taken into account when determining the significance of effects.

- 4.11.2 Enhancement measures will be assessed in accordance with steps set out in Planning Policy Wales (Edition 12) (Welsh Government, 2024).

4.12 Accompanying Planning Documents

- 4.12.1 In addition to the Environmental Statement, a suite of other documents will be submitted alongside the planning application.
- 4.12.2 One such document will be a Glint and Glare Assessment. Glint and glare is not an environmental factor in accordance with the EIA Regulations 2017 and therefore falls outside of the scope of the EIA. Any potential glint and glare effects will be assessed and reported in a standalone planning document. The results of this assessment will be incorporated into the landscape and visual assessment where necessary. **Appendix I** sets out the scope of the standalone planning document.
- 4.12.3 The local planning authorities are required to take a development's effect on the economy into account as part of their mandate to ensure sustainability and well-being. As economics is not an environmental factor, as required for consideration as part of the EIA Regulations 2017, the Proposed Development's effects on the economy will be considered as part of the Planning Statement and will not form part of the EIA.

4.13 References

Institute of Environmental Management and Assessment (IEMA). (2015). Environmental Impact Assessment Guide to Shaping Quality Development.

Planning Policy Wales (Edition 12) (Welsh Government, 2024) Available at: <https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf>

5 ENVIRONMENTAL FACTORS PROPOSED TO BE SCOPED OUT OF FURTHER ASSESSMENT

- 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 under Regulation 4(2) of the EIA Regulations 2017, for which it is considered an assessment as part of the EIA is not justified, and therefore will not be considered in the Environmental Statement. The following sections provide a justification for why these issues are scoped out of the EIA.

5.2 Air Quality

- 5.2.1 Section 83 of the Environment Act 1995 requires local planning authorities to designate an air quality management area (AQMA) when a national air quality objective is not being achieved, or is not likely to be achieved.
- 5.2.2 The Site is not located within an AQMA. The closest is 'Neath Port Talbot AQMA Taibach / Margam' AQMA, located 230 m west of the Site boundary. This AQMA is designated due to exceedances in airborne particulate matter with a diameter of 10 micrometers or smaller (PM₁₀) and covers the majority of land and properties between the Port Talbot Steel Works and the M4. While it is anticipated that vehicles during the construction phase would travel along the M4, as the M4 is part of the national transport network which is central to long distance travel and connectivity across the UK, and in this context predicted trip generation changes are anticipated to be minimal.
- 5.2.3 Furthermore, given the nature of the Proposed Development, any potential impacts on air quality would be highly localised and be restricted to the construction and decommissioning phases. It is anticipated that any emissions, associated with site activities and off-site traffic, would be unlikely to give rise to likely significant effects on the environment. Nevertheless, it is proposed that an outline Construction Environmental Management Plan (CEMP) and outline Construction Traffic Management Plan (CTMP) will be produced as part of planning application. These outline documents would be used as a basis for a full CEMP and CTMP secured by condition to safeguard against potential adverse effects during the construction phase of the Proposed Development.
- 5.2.4 As such, no significant air quality impacts are predicted and therefore air quality is scoped out of the EIA.

5.3 Climate

- 5.3.1 There are three types of assessment that are typically undertaken to consider the effects of a development on climate. These are:
- Greenhouse gas emissions assessment
 - Climate change risk, and
 - In-combination impact assessment.

GREENHOUSE GAS EMISSIONS

- 5.3.2 In accordance with IEMA (now ISEP) guidance on assessing Greenhouse Gas Emissions and Evaluating their Significance (2022), a project that causes GHG emissions to be avoided has a beneficial effect that is significant. Given the operational life of the Proposed Development is 40 years, the cumulative effect of greenhouse gas reductions associated with the operation of the Proposed Development would result in significant beneficial effects. While the Proposed Development would also result in the emission of greenhouse gases during the construction and decommissioning phases, the savings generated through the operational phase would vastly outweigh these.
- 5.3.3 It is therefore acknowledged that the Proposed Development would result in significant beneficial effects on the greenhouse gas emissions as it would result in an avoidance of greenhouse gas emissions, when compared to the current grid mix of energy production. To ensure the Environmental Statement remains proportionate, no further assessment is considered to be required as the requirement of an EIA is to identify, describe and assess “in an appropriate manner” significant effects of the proposed development.

CLIMATE CHANGE RISK

- 5.3.4 Climate change risk assessment is a risk assessment-based which identifies potential climate impacts to a development. It considers the likelihood or probability of that impact occurring and the severity or consequence of the impact identified.
- 5.3.5 The UK Climate Projections published in 2018 (UKCP18) suggest that climate change will lead to hotter drier summers, warmer wetter winters, increased likelihood of extreme weather events (e.g., heat waves, high rainfall events) and sea-level rise. However, these factors are not expected to significantly impact the construction, operation, or decommissioning of the Proposed Development and therefore are scoped out.
- 5.3.6 However, the risk of climate change will inherently be considered within the other assessment reports, in particular the Flood Consequence Assessment.

IN-COMBINATION IMPACT ASSESSMENT

- 5.3.7 The in-combination impact assessment considers the receptors and effects identified elsewhere within the ES and evaluates whether climate change would alter:
- the susceptibility and vulnerability of the receptors identified, and / or
 - the magnitude of the effect identified.
- 5.3.8 The resilience (a combination of the receptors susceptibility and vulnerability) of the of receptors identified in other factor assessments is unlikely to be affected by a combination of future climate change (e.g. temperature change, sea level rise, or wind).
- 5.3.9 Climate change is also not anticipated to result in any new significant effects from the Proposed Development as a result of these changes. Climate change may lead to an increase in extreme rainfall events, however, no significant impact on surface water or groundwater levels are expected as a result of precipitation changes, in combination with the Proposed Development, as the flow of precipitation to ground will not be significantly hindered.

5.4 Heat and Radiation

- 5.4.1 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 Environmental Statement 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.!

- 5.4.2 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. The consideration of heat and radiation emissions has therefore been scoped out of further assessment and has not been considered further in this EIA Scoping Report.

5.5 Land and Groundwater

- 5.5.1 The main development area plus a 250 m buffer has been considered as the study area with regard to identifying land and groundwater related receptors that could be impacted by the construction, operation, and decommissioning of the Proposed Development. The size of the study area is based on professional judgement and considered appropriate to identify features that may be impacted by the Proposed Development or may impact the Proposed Development.

- 5.5.2 The baseline conditions of the study area have been determined using a number of different sources, including:

- A walkover survey of the main development area
- Geological maps (bedrock and superficial geology)
- Hydrogeological and groundwater vulnerability maps
- Site-specific data from a commercially purchased environmental database, including abstraction and discharge records relating to groundwater, aquifer designations, source protection zones; NRW, local authority and British Geological Survey (BGS) data on the location of waste sites, pollution incidents and potentially contaminated sites; and data on Sites of Special Scientific Interest (SSSI) designated for their geological merit;
- Historical mapping for the study area obtained as part of a commercially purchased environmental database
- Geological Conservation Review Sites (DataMap Wales)
- Regionally Important Geodiversity Sites (DataMap Wales)
- Predictive Agricultural Land Classification (ALC) Map 2 (DataMap Wales)
- Peatland of Wales (DataMap Wales), and
- LandIS Soilsclapes Viewer (LandIS, accessed September 2025).

- 5.5.3 Other information has been obtained from the BGS Onshore GeoIndex.

GEOLOGY

- 5.5.4 Superficial geological strata are absent from beneath the main development area. Till (glacial) is present at the far northern extent of the proposed access track.

- 5.5.5 Bedrock beneath the Site, in order of increasing age are the Brithdir Member; Rhondda Member; and Llynfi Member of the Pennant Sandstone Formation comprising sandstones with subordinate mudstones and thin coals. In turn the Llynfi Member is underlain by older strata of the South Wales Middle Coal Measures described as grey, coal-bearing mudstones/siltstones, with seatearths and minor sandstones.

HISTORICAL COAL MINING

- 5.5.6 The former Brombil Colliery is located to the north-west of the main development area centred on (SS 79523 87865) in a steep sided valley; a number of coal seams are noted to cross the main development area at its south-western and north-eastern extents. Coal seams are noted to trend approximately from north to south. In addition, a mine entry (adit) is indicated in the west of the area (SS 79280 87380) on a bearing of 093 degrees. Further mine entries associated with the Brombil Colliery are shown off-site to the north within the study area. One mine entry (adit) is shown close to the main development area boundary (SS 79376 87609) with a bearing of 140 degrees and may therefore encroach upon the site boundary.

PEAT

- 5.5.7 Sporadic occurrences of peat are present to the north of the main development area in Margam Forest. One such occurrence is located adjacent to an existing forestry track (SS 82752 89540) on a heavily wooded valley side. It is proposed to use the forestry track as the access to the development (see **Appendix B**, Designations and Sensitivities (Ecology, Land and Soils, Water and Air Quality)).
- 5.5.8 LandIS' Soilscape Viewer identifies two soil profiles that cover the Site. The western portion of the main development area is classified as Soilscape 13, which comprises freely draining acid loamy soils over rock. The eastern portion of the main development area, and much of the access track, is classified as Soilscape 16, which comprises very acid loamy upland soils with a wet peaty surface.

HYDROGEOLOGY

- 5.5.9 Superficial deposits are classified as either a secondary undifferentiated aquifer (Till) or an unproductive aquifer (Peat).
- 5.5.10 The Pennant Sands Formation and South Wales Middle Coal Measures bedrock are classified as secondary A aquifers. A secondary A aquifer is defined as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
- 5.5.11 The study area does not lie within a Source Protection Zone and there are no abstractions within the study area, with the closest groundwater abstraction recorded as being 257 m to the east of the northern extent of the proposed access.
- 5.5.12 Depth to groundwater is unconfirmed. It is anticipated that the regional direction of groundwater flow is in line with local topography and towards surface watercourses to the north, west and south.

MINERAL EXTRACTION SITES AND MINERAL SAFEGUARDING AREAS

- 5.5.13 There are no currently operational mineral extraction sites within the study area. The BGS (2012) South East Wales Aggregate Safeguarding Map of Wales (1:100,000 scale) indicates the bedrock beneath the main development area to be categorised as a Category 1 Aggregates Safeguarding Area due to the presence of sandstone.

DISCHARGE CONSENTS

- 5.5.14 There are no recorded discharge consents within the study area.

HISTORICAL SITE USAGE

- 5.5.15 The study area appears to have been in agricultural or forestry use since 1885. However, a mine entry (adit) located on site and an old tramway extending from the site boundary to the Bronbil Colliery indicates that coal may have been mined from beneath the west of the main development area prior to the earliest Ordnance Survey mapping.
- 5.5.16 A disused railway tunnel is located beneath the northern part of the proposed access track that once carried coal from the coalfields to Port Talbot.

LAND CONTAMINATION

- 5.5.17 There are no recorded landfills (current or historical) nor waste transfer sites within the study area.
- 5.5.18 The history of the Site and study area indicates that land use has been agricultural or forestry. Contamination may be present associated with agriculture although this is unlikely to be extensive. No potentially significant contaminative sources were identified from the site walkover. Based on available historical mapping and walkover, there is no information suggesting other potentially significant contaminative site uses have occurred on site or within the study area. Made Ground may be present in limited locations within areas mined for coal; along farm tracks and in farm gateways. There were no obvious signs of Made Ground noted during the site walkover. There is the potential for asbestos-containing materials (ACM) to be present if Made Ground deposits are identified.
- 5.5.19 No significant pollutions incidents within the study area have been recorded in the last 20 years.

NATURAL GEOLOGICAL HAZARDS

- 5.5.20 According to the environmental database information, there is the potential for very low to moderate risks from geological hazards within some parts of the main development area:
- Collapsible ground hazards: very low hazard;
 - Compressible ground hazards: negligible hazard;
 - Running sand hazards: negligible hazard;
 - Shrink/swell clay hazards: very low hazard to negligible;
 - Ground dissolution hazards: negligible hazard; and
 - Landslide hazards: very low to moderate, with a small area in the west shown as having a low to moderate hazard.
- 5.5.21 It should be noted that 'geological hazards' are not a 'sensitive receptor', and therefore although these issues have been considered as part of this scoping process, the assessment methodology is different to when considering the effects of the Proposed Development on a sensitive receptor. This approach is supported by Design Manual for Roads and Bridges (DMRB) LA 109 Geology and Soils (DMRB, 2019), which indicates that geotechnical hazards and land stability are not assessed as part of an Environmental Statement.

5.5.22 Based on the information obtained to date, no sensitive receptors have been identified that need to be further assessed as part of the Environmental Impact Assessment. The justification for this is provided in **Table 5.1**.

Table 5.1 Justification for Scoping Out Land and Groundwater Receptors/Matters

Receptor/Element	Phase	Justification
Land (geological units)	Construction, operation and decommissioning	There are no recorded geologically related Sites of Special Scientific Interest (SSSI); Regionally Important Geodiversity Sites (RIGS); and Geological Conservation Review (GCR) sites within the study area. No significant effects are anticipated.
Peat	Construction, operation and decommissioning	Peat has not been identified beneath the main development area on either the Datamap Wales website or in geological mapping. One area of peat was noted to be located in a heavily wooded area adjacent to an existing forestry track. It is understood that the forestry track is in operation at present, and the Proposed Development would not result in any changes to the track. As such no impact to the mapped body of peat is anticipated. Based on the available information it is anticipated that peat would not be significantly affected by the Proposed Development and can be scoped out of the ES.
Coal mining	Construction, operation and decommissioning	Coal seams are noted to outcrop across the study area with an adit noted in the far west of main development area; and a further adit that could encroach on that area. A Coal Mining Risk Assessment (CMRA) may be required as a result of the presence of adits on site and the location of the proposed sub-station which may interact with recorded coal seams. Consultation with the Mining Remediation Authority would determine whether or a not a CMRA is required. If required, this could be secured through the planning process as a condition and therefore this factor need not be taken forward and assessed as part of the Environmental Impact Assessment. The CMRA would set out any intrusive investigation required to inform the safe development of the development. In most cases, the risks posed by geological hazards can be mitigated (at least in some degree), by engineered solutions such as an alternative design of mounting structures for PV panels), or by adjusting the locations of project elements.
Land (mineral safeguarding)	Construction, operation and decommissioning	The Site lies within a mineral safeguarding area based on the BGS (2012) South East Wales Aggregate Safeguarding Map of Wales (1:100,000

Receptor/Element	Phase	Justification
	decommissioning	scale). The main development area has been categorised as part of a much wider Category 1 Aggregates Safeguarding Area due to the presence of sandstone. The current Neath Port Talbot Adopted Local Development Plan (2011 – 2026) states that the current supply of crushed rock is met from two existing quarries at Gilfach (Neath) and Cwn Nant Lleici (Pontardawe). In addition, the Development Plan states that the total landbank figure for Neath Port Talbot is more than sufficient to satisfy the Authority's own requirements. It is considered unlikely that the Site can be feasibly developed for mineral extraction given the access and planning constraints that would be posed to a mineral extraction operation. Given the above and that the Proposed Development is considered temporary over the medium term (assumed 40 years) this factor need not be taken forward and assessed as part of the Environmental Impact Assessment as the mineral would not be permanently sterilised and no significant effects are anticipated.
Land (potential contamination)	Construction, operation and decommissioning	No significant sources of contamination have been identified in the study area or during the walkover. Therefore, risks from the presence of contaminated ground are considered low at this stage. Any issues relating to contamination resulting from construction activities would be controlled by the requirements of a CEMP through a 'discovery' strategy; and covering issues relating to storage and use of fuels. There would not be anticipated to be any further impacts on the Proposed Development during operation or decommissioning as a result of contamination, if present. Any issues relating to contamination resulting from project activities would be controlled by the Site specific requirements and the Outline Decommissioning Environmental Management Plan (e.g., issues relating to storage and use of fuels). The requirement for an intrusive investigation for contamination purposes prior to the start of construction could be secured through the planning process as a condition. This could include the provision of a remedial strategy and subsequent verification reports if required. Therefore, this factor need not be taken forward and assessed as part of the Environmental Impact Assessment as no significant effects are anticipated.

Receptor/Element	Phase	Justification
Land (geological hazards)	Construction, operation and decommissioning	In general, the baseline review has not identified any geological hazards that require specific consideration during construction, operation or decommissioning of the Proposed Development. A small area crossing the western end of the main development area is noted to have a low to moderate risk ranking with respect to slope instability. However, this area is not being considered for development with electrical equipment and the Proposed Development is not anticipated to increase this risk. An intrusive investigation will be required to understand the ground conditions, inform foundation options and allow safe development. Therefore, this factor need not be taken forward and assessed as part of the Environmental Impact Assessment as no significant effects are anticipated.
Groundwater	Construction, operation and decommissioning	The groundwater in bedrock deposits in the main development area is a secondary A aquifer. Groundwater in superficial deposits, where present, are classified as a secondary undifferentiated aquifer (Till). The quality of groundwater will be appropriately protected by best practice mitigation measures implemented via the Outline CEMP and Outline Decommissioning Environmental Management Plan, which will be submitted to accompany, and will be secured by, the planning application. They will be managed by the principal contractor undertaking the works. The purpose of these management plans is to provide guidelines to avoid, minimise or mitigate effects on the environment (including issues relating to groundwater) during construction, operation and decommissioning. This would include emergency procedures to manage accidental spillages and leaks and include procedures to mitigate against contaminated land, if encountered, and erosion. Due to the connection between quality of surface water and quality of groundwater, it is possible that changes to the surface water regime could have a negative impact on the Site groundwater. However, adhering to industry best practice with respect to protection of surface water will ensure that any adverse effects to surface water are minimised, reducing the potential for corresponding changes within the groundwater. The CEMP will include the following items to reduce any potential effects to groundwater and surface

Receptor/Element	Phase	Justification
		water: • Pollution incident control; • Emergency preparedness; • Extreme weather events; • Construction site security; and • Site materials and waste management. If piling is necessary for the mounting structure, a Piling Risk Assessment will be undertaken prior to construction commencing. This will ensure potential risks to groundwater from piling operations are managed appropriately. Any such requirement would be informed by an intrusive investigation secured through the planning process via a condition.

5.5.23 A desk-based Preliminary Risk Assessment (PRA) report will be prepared to accompany the planning application. In addition to the site walkover already undertaken, this will comprise:

- a study of local geology and hydrogeology, including the provision of historical BGS boreholes; potential geological hazards, including radon; and an initial study of coal mining legacy
- study of the land-use, development history and environmental data on the site and its surroundings from local authority correspondence, an environmental database report and archival Ordnance Survey mapping
- the identification of aquifer vulnerability rating beneath the site and local water abstraction points from NRW records held within the environmental database, and
- the identification of potential sensitive receptors at risk from possible contamination.

5.5.24 The PRA report will collate the existing information pertaining to the Site to construct a conceptual site model that helps identify potentially complete contaminant linkages (contaminant–pathway–receptor) and provides an assessment of potential risk to human health, controlled waters (ground water and surface water) and other environmentally sensitive receptors.

5.6 Major accidents and disasters

5.6.1 Schedule 4(8) of the EIA Regulations 2017 requires that an Environmental Statement includes:

“A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.”

- 5.6.2 Guidance on the consideration of major accidents and disasters is provided by 'Major Accidents and Disasters in EIA: An IEMA Primer'. This focuses on the consideration of low likelihood/high consequence events which would result in serious harm or damage to environmental receptors, and which could encompass risks exacerbated by climate change. This includes accidents or disasters originating from a Proposed Development as well as external events (man-made or natural).
- 5.6.3 In considering the potential for significant effects from the vulnerability of the Proposed Development to risks of accidents and disasters, it is important to note that the UK already has a structured framework of risk management legislation in place. Vulnerability to major accidents and / or disasters for infrastructure and other built environment developments is covered by a wide range of other safety and non-safety-related legislation, as detailed below:
- Health and Safety at Work Act 1974
 - Construction (Design and Management) Regulations 2015
 - The Construction (Health, Safety and Welfare) Regulations 1996, and
 - Electricity Safety, Quality and Continuity Regulations 2002.
- 5.6.4 The risk of major accidents and disasters will be considered throughout the design process of the Proposed Development. This includes siting the potentially hazardous equipment, such as the grid infrastructure, at a suitable distance from sensitive receptors.
- 5.6.5 It should be noted that, as Battery Energy Storage Systems would not be utilised as part of the Proposed Development, battery fire is not a risk for the Proposed Development.
- 5.6.6 The construction, operation and decommissioning phases of the Proposed Development have the potential for limited interactions which may give rise to major accidents and/or disaster. **Table 5.2** presents a list of possible major accidents and disasters that will require consideration.

Table 5.2 Possible major accidents and disasters

Major accident and/or disaster	Potential receptor	Comments
Flooding	Properties Local residents	The Site is located within Flood Zone 1, meaning it is not considered to be at risk of tidal or fluvial flooding. The Site is also not considered to be at significant risk of surface water flooding, with surface water flooding risk within the Site highly localized to existing watercourses within the boundary. The vulnerability of the Proposed Development to flooding and its potential to exacerbate flooding, will be covered in the standalone Flood Consequence Assessment, which will be submitted to accompany the application.
Aircraft disasters	Pilots	The potential for glint and glare to affect aircraft will be considered within the standalone glint and glare assessment. As set out in Section 5.3, no significant glint and glare effects are anticipated for aviation receptors.

Major accident and/or disaster	Potential receptor	Comments
Plant disease	Habitats and species	New planting may be susceptible to biosecurity issues, such as increased prevalence of pests and disease, due to source of provenance and climate change. The planting design and Outline Landscape and Ecological Management Plan will take account of and manage biosecurity risks.

- 5.6.7 Those major accidents and disasters that are not considered within the scope of the existing technical assessment will continue to be reviewed and addressed as part of the design process. The construction, operation and decommissioning of the Proposed Development are not considered to have a risk of major accidents or disasters that could affect existing or future receptors, which are not considered through existing design mitigation and regulatory regimes.
- 5.6.8 The embedded mitigation in place is generally sufficient to manage vulnerabilities to major accidents and/or disasters without the need for additional mitigation in most circumstances. It is not expected that inclusion of major accidents and disasters in the EIA scope would add any greater level of safety performance to that already established process. By implementing recognised and approved safety legislation and regulation, no significant effects in relation to major accidents and disasters are anticipated during the construction, operation and decommissioning phases. It is therefore proposed to exclude major accidents and disasters from the scope of the EIA.

5.7 Material Assets and Waste

- 5.7.1 Material assets are defined as “substances used in each lifecycle stage of a development, with particular focus on the construction, operation and maintenance, and decommissioning or ‘end of first life’ (deconstruction, demounting, demolition and disposal) phases” (IEMA, 2020). Material assets can include ‘material’ (i.e. physical resources that are used across the lifecycle of a development) and ‘excavated arisings’ (i.e. soil, rock, or similar resource generated by excavations).
- 5.7.2 Waste is defined as “any substance or object which the holder discards or intends or is required to discard” (IEMA, 2020). The Waste Framework Directive definition includes any substance or object that is discarded for disposal or that has not been subject to acceptable recovery (including reuse and recycling).
- 5.7.3 The potential for impacts and significant adverse effects of materials consumption and waste disposal relevant to the Proposed Development are set out in **Table 5.3**.

Table 5.3: Impacts and effects of material consumption and waste disposal potentially relevant to the Proposed Development

Matter	Potential Impacts	Potential Adverse Effects	Applicable Development Phase
Materials	Consumption of resources	Depletion of resources, resulting in the temporary or permanent degradation of the natural environment	Construction / Decommissioning
Waste	Generation and disposal of waste	Reduction in landfill capacity. Unsustainable use of loss of resources to landfill that results in the temporary or permanent degradation of the natural environment.	Construction / Decommissioning and Operational maintenance

- 5.7.4 The indirect impacts associated with materials consumption and waste disposal on factors of the environment (e.g. release of greenhouse gas emissions to the atmosphere, impact of water use on ecological receptors, etc.) will be assessed where applicable in the relevant Environmental Statement chapter. Similarly, the indirect impacts of any offsite waste management or material production processes would be assessed (and where necessary, mitigated) under the relevant planning and permitting regime. It is assumed that during the decommissioning phase, any infrastructure and waste requiring removal from site will be recycled or disposed of in accordance with good practice and legislative requirements at that time.
- 5.7.5 A description of the potential streams and volumes of construction materials and waste disposal will be described within the Proposed Development Description Chapter of the ES. In addition to this, the Outline CEMP will set out how construction materials and waste will be managed on-site, and opportunities to recycle waste will be explored. Additionally, the CEMP will commit to achieving or exceeding 90% diversion of construction and demolition waste from landfill by 2025, in line with Wales' Towards Zero Waste Strategy.
- 5.7.6 Significant quantities of waste arisings are not anticipated to require removal from the Site during construction (no demolition works are proposed). Similarly given the undeveloped nature of the Site, it is not anticipated that contaminated land or soil requiring specialist investigation and disposal will be encountered. Where possible, soil arisings will be balanced through a cut and fill exercise to retain volumes on Site.
- 5.7.7 There will be relatively little waste produced during the operation phase and the requirement for material assets will be limited to maintenance and replacement parts, as required.
- 5.7.8 A description of any relevant impact avoidance and best practice measures considerations will be included within the Description of the Proposed Development chapter of the ES.

5.8 Population and Human Health

- 5.8.1 For the purposes of this EIA we interpret population and human health to comprise the following three aspects:

- Human health, and
- Land use and public access.

HUMAN HEALTH

- 5.8.2 It is proposed that consideration of the potential effects to human health as a result of the Proposed Development will be covered through the findings of other assessments undertaken as part of the EIA process, as follows:
- Landscape and visual;
 - Noise and vibration; and
 - Traffic and movement.
- 5.8.3 Each of these chapters within the EIA Scoping Report and subsequent Environmental Statement will consider the potential effects to human health within their own assessments. Outside of the EIA process, a glint and glare assessment will be undertaken (see **Appendix I**), which will consider the potential human health effects from glint and glare.
- 5.8.4 As any potential human health impacts will be captured by the aforementioned assessments and there are not expected to be any significant human health impacts outside of these assessments, it is proposed that human health is not subject to dedicated assessment and therefore excluded from the scope of the EIA.

LAND USE AND PUBLIC ACCESS

- 5.8.5 The Site largely comprises grassland and agricultural land which are widespread in Wales.
- 5.8.6 All phases of the Proposed Development will inevitably require land to be taken out of agricultural production. The Site is owned and operated by a single landowner. However, it is understood that there may be tenants / occupiers currently undertaking agricultural operations across the Site boundary who may cease to do so for the duration of the operational phase of the development. The loss of these agricultural operations is not expected to lead to a significant effect in relation to employment in the local area.
- 5.8.7 There are a number of PRoW within the Site boundary that allow movement across the Site for walkers. Additional footpaths are located immediately adjacent to the Site, notably the Wales Coastal Path to the south-west. The Wales Coastal Path is a continuous footpath stretching its entire length of the Welsh coastline.
- 5.8.8 To ensure the safety of the users of the PRoW when construction plant is in operation a banksperson would be utilised where construction plant would cross the route of the PRoW.
- 5.8.9 Control measures to ensure the safety of users of the PRoW would be secured via the Outline CEMP and the Outline Construction Traffic Management Plan (CTMP). These control measures will be developed in consultation with NPTCBC and BCBC.
- 5.8.10 Impacts to users of PRoW are therefore expected to be minimised and where they do occur they will be short term and temporary. As such, it is not expected that changes to the PRoW will significantly impact recreational use of the Site and therefore it is proposed to scope this matter out of further assessment.

5.9 Traffic and Movement

- 5.9.1 Construction of the Proposed Development will require the materials to be transported to the Site in standard Heavy Goods Vehicles (HGV), leading to a temporary increase in traffic volumes on the surrounding road network. A small number of trips will be generated by personnel travelling to Site (the peak number of site operatives is expected to be between 60 and 70 workers).
- 5.9.2 The transformer will be transported by sea to a defined Port of Entry (PoE), from where it would be brought to the Site by an abnormal load vehicle via an agreed route. The proposed PoE for the Abnormal Indivisible Load (AIL) is Swansea. It is anticipated that the AIL access route to the Site would follow the M4, A4107, and B4282 Neath Road, as well as A483 Fabian Way (Eastbound). The route from the M4 is illustrated in **Appendix E**. It is understood that this route has previously been used for the delivery of AIL associated with operational wind farm Mynydd Brombil.
- 5.9.3 Appropriate construction traffic management and mitigation measures will be set out and secured within an Outline CTMP which will be prepared to accompany the planning application (with a detailed CTMP secured by planning condition). The construction period is to be confirmed but is estimated to take approximately 12 months. It is expected that construction hours will be between 0800 and 1800 hours Monday to Friday and 0800 and 1330 hours on Saturday.
- 5.9.4 Anticipated numbers of daily construction vehicle movements have not been confirmed at this stage. However, based on experience from other projects of a similar size and nature, it is expected that over the anticipated 12-month construction period, the daily average construction traffic generation associated with the Proposed Development would not have a significant impact on the surrounding population and highway network following the implementation of mitigation measures set out and secured in a CTMP.
- 5.9.5 No substantial changes are proposed to the on-site PRow routes. Standard best practice mitigation measures, implemented through the Outline CEMP and Outline CTMP would ensure the safety of any PRow users during the construction phase.
- 5.9.6 Once operational, the solar farm will be operated remotely and is anticipated to only require one to two visits per month for maintenance, monitoring and cleaning of the panels and the Site.
- 5.9.7 The suggested changes in traffic flows (during operation) in the vicinity of the Site represent a negligible change in traffic flows; similarly, the Site is not located in a specifically sensitive location. On this basis, the anticipated increases in vehicle movements during operation would be well below the 'Guidelines for the Environmental Assessment of Road Traffic' which suggest two broad rules that can be used as a screening process to identify the appropriate extent of the assessment area. These are:
- Rule 1 – Include highway links where traffic flows would increase by more than 30% (or the number of new HGVs would increase by more than 30%); and
 - Rule 2 – Include any other specifically sensitive areas where traffic flows would increase by 10% or more.
- 5.9.8 Therefore, the operational traffic generated by the Proposed Development would have a negligible influence on the surrounding population and highway network.
- 5.9.9 It is therefore considered that transport, both construction and operational can be scoped out of the ES and adequately addressed through the submission of a Transport Assessment and an Outline CTMP as standalone technical reports, which

will accompany the planning application. The Transport Assessment will assess the highway geometries and layouts of the access route along with its existing traffic volumes and road safety records and will determine any traffic management and mitigation measures that may be required such that the construction vehicles would not result in any material impacts upon road users, the operation of the highway and highway safety. The outline CTMP will detail the delivery routes, construction routes, construction compounds and any associated parking or management of construction traffic will also be prepared prior to the construction of the Proposed Development. Prior to construction works commencing, this would be developed into a detailed CTMP and secured by planning condition. It is also proposed that details of the operational traffic movements and any onsite parking and turning spaces will be provided as part of the planning application.

5.10 Water Resources and Flood Risk

- 5.10.1 This section considers the potential impacts arising from the construction, operation and decommissioning of the Proposed Development on water receptors. In particular, it considers the potential impacts of the Proposed Development on flood risk and surface water. It should be noted that groundwater has been considered within the Land and Groundwater Assessment, please refer to **Section 5.5**.
- 5.10.2 There are three minor unnamed watercourses (ordinary watercourses) located within the main development area. Two of the watercourses are situated in the west of the main development area (along the boundaries between field 17 and fields 20 and 21) and join prior to exiting the Site boundary, one of which is indicated by Ordnance Survey (OS) mapping to be fed by a groundwater spring. The third ordinary watercourse / ditch is located in the south-east of the main development area (on the boundary between fields 11 and 12) and appears hydrologically disconnected at either end suggesting the watercourse is likely an artificial drain / ditch. There are no main rivers located within the Site boundary.
- 5.10.3 In accordance with NRW's online Flood Map for Planning, which considers the fluvial flood risk, the Site is entirely located within Flood Zone 1. Surface water and small watercourses flood risk across the Site is also predominantly Flood Zone 1, with minor areas of Flood Zones 2 and 3 in the west of the Site associated with one of the two minor unnamed watercourses in that location. Another localised area is present within the north-east of the main development area; while this area does encroach within the Site, it is predominantly located outside of the Site boundary.
- 5.10.4 There is minimal surface water flooding indicated along the Site access road. These areas are associated with two minor watercourses (Ordinary Watercourses): Nant y Glo and Nant Cwmfarteg.
- 5.10.5 The Site is not located within a source protection zone.
- 5.10.6 Without sufficient mitigation, the Proposed Development has the potential to result in increased localised flood risk (e.g. due to earthworks and changes to overland flows) and watercourse pollution (e.g. due to works near existing watercourses and mobilisation of contaminants and silt).
- 5.10.7 To minimise likely effects on the on-site watercourses, the Proposed Development design includes a 10 m off-set from the watercourses and the proposed solar equipment. Furthermore, during the construction and decommissioning phases, changes in flood risk and surface water runoff and the possible contamination of the on-site watercourses would be managed through the adoption of good practice principles which will be identified within the outline CEMP, submitted as part of the

planning application. Prior to construction works commencing, the outline CEMP would be developed into a detailed CEMP and would include a construction surface water management plan and awareness training for site operatives to ensure possible effects are mitigated through working practices. It is also anticipated that a temporary drainage system would be implemented during construction, and where possible the permanent drainage system would be installed early in the construction programme.

- 5.10.8 Once operational, the Proposed Development would include a surface water drainage network which will be designed in line with local and national policy (e.g. TAN15 (Planning Policy Wales, 2004 updated 2025) and local guidance) and in agreement with relevant stakeholders (i.e. NPTC, BCBC, and NRW). The network where possible, will seek to reduce the surface water runoff from the Site to agreed rates which would ensure there is no increase in flood risk downstream as a result of the Proposed Development.
- 5.10.9 When considering the design of the Proposed Development and the mitigation measures proposed, no significant environmental effects are anticipated in relation to water resources and flood risk. Therefore, it is proposed to exclude water resources and flood risk from the scope of the EIA.
- 5.10.10 A Flood Consequence Assessment and Surface Water Drainage Assessment will be prepared to accompany the planning application.

5.11 Transboundary effects

- 5.11.1 Schedule 4 of the EIA Regulations 2017 requires the consideration of any likely significant effects on the environment of another European Economic Association (EEA) State.
- 5.11.2 Due to the nature and location of Proposed Development, it is not anticipated that the Proposed Development will lead to any likely significant effects on the environment of another European Economic Association (EEA) State. Therefore, a transboundary screening matrix has not been included within this EIA Scoping Report.

5.12 References

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6 ENVIRONMENTAL FACTORS PROPOSED TO BE SCOPED INTO FURTHER ASSESSMENT

6.1 Introduction

6.1.1 As part of the EIA process and based on the baseline information available to date, there are a number of environmental factors for which it is considered an assessment as part of the EIA is required, and therefore a standalone chapter will be presented in the ES. The environmental factors scoped in are:

- Biodiversity
- Cultural Heritage
- Landscape and Visual, and
- Noise and Vibration.

6.1.2 Each of these sections is set out in the following structure to ensure consistency of approach to consideration of the scope of the different factors of the environment:

- Consultation
- Study area
- Data sources to inform the EIA baseline characterisation
- Surveys to inform the EIA baseline characterisation
- Baseline conditions
- Potential additional mitigation measures
- Potential likely significant effects
- Receptors/matters to be scoped into further assessment
- Receptors/matters to be scoped out of further assessment
- Opportunities for enhancing the environment
- Proposed assessment methodology
- Difficulties and uncertainties
- References, and
- EIA scoping questions for consultees.

6.2 Biodiversity

6.2.1 Consultation

No pre-scoping consultation has yet been carried out with relevant stakeholders.

Post-scoping consultation is being sought with NRW, NPTC and BCBC to provide them with a detailed baseline understanding to inform comments on the proposed assessment and mitigation methodologies.

If required, NRW will also be consulted to agree a suitable licensing and mitigation strategy for protected species and/or important habitats during the construction and operation phases, including whether existing data will be sufficient to inform a licence application or

modification.

6.2.2 Study area

The assessment will use the findings of ecological surveys undertaken at and surrounding the Site. The study areas predominantly focus on the development area of the Site (i.e., excluding the access track) plus an appropriate buffer zone. Each study area varies per receptor, as discussed below:

- A Preliminary Ecological Appraisal (PEA) of the development area and, where access allows, the surrounding 250m corridor has been undertaken to identify broad habitat types, potential for protected species to be present, and to inform further survey requirements. The PEA results will be used to target a National Vegetation Classification (NVC) survey of important or priority habitats within the development area and surrounding 250 m to provide further information for condition assessments and species lists for habitats of principal importance as listed under Section 7 the Environment (Wales) Act 2016.
- A 500 m survey area from the development area has been used for great crested newts (GCN) (*Triturus cristatus*) to identify suitable terrestrial habitats and potential breeding ponds. A 500m buffer is widely accepted as the maximum distance that GCN can travel up to from a breeding pond (providing suitable connectivity is present) during the terrestrial phase of their lifecycle. It is the typical survey radius for large scale projects involving permanent habitat loss (English Nature, 2001) however, where appropriate this may be reduced to 250m where barriers to the movement of GCN are present, for example major roads.
- An assessment for reptile habitat suitability has been undertaken within the development area and surrounding 250 m to identify areas of suitable habitat with the potential to be impacted by the Proposed Development.
- An assessment for dormouse habitat suitability has been undertaken within the development area and surrounding 250 m to identify areas of suitable habitat with the potential to be impacted by the Proposed Development.
- Ornithological surveys within the development area will be undertaken to record bird activity within the site.
- Badger (*Meles meles*) surveys within the development area plus the surrounding 30 m will be undertaken to record field activity and the presence of badger setts. A 30 m buffer is typically recommended to protect a badger sett during construction (Natural Resources Wales, 2018; English Nature, 2002).
- The Preliminary Roost Assessment (PRA) for bats will include all trees and buildings within the works area that have the potential to be affected by the Proposed Development (i.e., if any are predicted to be demolished) to identify important roost sites, such as maternity roosts, significant hibernation and/or swarming sites. Further surveys will focus on these possible important roosts and/or swarming sites following stakeholder consultation and once design plans have been finalised.
- Bat activity surveys will be completed using static detectors to identify the species assemblage that may be affected by the proposed development. Surveys will occur between September 2025 and August 2026 following Colins (2023) guidelines.
- An assessment of Water vole (*Arvicola amphibius*) habitat suitability was undertaken within the development area plus up to 100 m upstream and downstream (where accessible). A distance of 100 m upstream and downstream has been used as works are unlikely to directly impact watercourses on a permanent basis. This survey buffer would account for any local water vole population that could commute further along the

watercourse and into the Site boundary (Dean *et al.*, 2016).

- An assessment of Otter (*Lutra lutra*) habitat suitability was undertaken within the development area, plus up to 100 m upstream and downstream (where accessible). A distance of 100 m upstream and downstream has been used as works are unlikely to directly impact watercourses on a permanent basis.
- Habitat assessments for brown hare, polecat and hedgehog will also be undertaken to identify areas of suitable habitat within the development area and surrounding 250 m.

As part of the PEA, a Background Data Search (BDS) for information relating to ecology (e.g., statutory and non-statutory designated sites and protected species records) has been undertaken. This included a search for international (10 km study area) and national statutory designated sites (2 km study area) such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar sites and Sites of Special Scientific Interest (SSSI).

Protected species records obtained from the local record centre for the Site and extended to 2 km beyond its boundary. The BDS was also made for non-statutory designated (often important in a local context) on the Site and within 2 km of the Site boundary as well as ancient woodlands within 1 km.

Therefore, the Site and the surrounding is considered to be the Zone of Influence (Zoi) for the majority of ecological receptors; extending to 10 km to consider statutory sites for birds and bats. The Zoi is the area encompassing all predicted ecological effects from the Proposed Development, including all ancillary, associated temporary and permanent works.

6.2.3 Data sources to inform the EIA baseline characterisation

The proposed assessment scope has been based on:

- A background data search from Aderyn records centre which included a search for designated sites and protected species records within 2 km of the Site, extended to 10 km for SPAs, SACs, Ramsar sites and SSSIs.
- The Multi-Agency Geographic Information website (MAGIC) to view statutory designated nature conservation sites.
- DataMapWales: <https://datamap.gov.wales/>
- Designations and legal protection of noteworthy species Joint Nature Conservation Committee (JNCC) website
- Details of species and habitats listed on the Neath Port Talbot Local Nature Recovery Action Plan NPT Nature Partnership website <https://www.npt.gov.uk/5405>
- Detailed of species and habitats listed on the Bridgend Local Biodiversity Action Plan. Website <https://www.bridgend.gov.uk/residents/nature-and-environment/nature-recovery-plan/#:~:text=The%20'Bridgend%20County%20Borough%20Local,makes%20suggestions%20for%20conserving%20them.>

The assessment to be reported in the ES will also be based on surveys undertaken by the Project Team in 2025 and 2026 (see Section 0 for more details).

6.2.4 Surveys to inform the EIA baseline characterisation

The proposed assessment scope has been informed by the data sources described above alongside the following surveys undertaken by the Project Team in 2025:

- PEA (July /August)
- Reptile habitat assessment (July / August)

- Water vole habitat assessment (July / August)
- Otter habitat assessment (July / August); and
- Ornithological surveys (2025)

Post-scoping assessments will be informed by the following additional surveys, due to be undertaken in 2025/2026:

- Badger survey
- NVC botanical surveys
- Brown hare, hedgehog and polecat habitat assessments
- GCN surveys of ponds, including habitat suitability index (HSI) and presence/ absence surveys
- Ornithological surveys
- PRA surveys of potential structures (trees and buildings) likely to support bat roosts
- Bat roost presence or absence surveys (if required following the above survey), and
- Bat activity surveys.

6.2.5 Baseline conditions

The Site is dominated by other neutral and modified grassland, many of these grassland fields are bordered by banks with dense bracken, with areas of coniferous woodland, gorse and bramble scrub and marshy grassland also present. The areas of modified grassland are actively grazed by both sheep and cows, with areas also being mown for silage. Several waterbodies are present within the site boundary. The Phase 1 Habitat Plan for the main development area is presented in **Appendix J**.

The Site is predominantly bordered by forestry to the north, east and west. Forestry is also present to the south of the Site, however to the south west of the Site boundary are agricultural fields and associated buildings at Crugwyllt Fawr. The surrounding area is generally made up of agricultural fields sparsely interrupted by forested areas.

Designated Sites

There are no statutory designated sites within or adjacent to the Site. However, there are eight statutory designated sites within a 10 km radius of the Site. These include four internationally designated SAC sites and one Ramsar site. Details of these are provided below:

Site name	Reasons for designation	Approximate distance (m) and direction from Site
Margam Country Park	Broad leaved, coniferous and mixed woodlands, scrub, grassland, bog, lakes and streams providing a diverse countryside. Diverse and abundant fauna within the park including nationally important bat populations.	220 - SE
Eglwys Nunydd Reservoir SSSI	The largest sheet of freshwater in the county. On the site of Margam Moors which, before being reclaimed for the Abbey Steel Works, were a notable site for wildfowl. The reservoir attracts large numbers of wintering waterfowl and passage migrants. Notable species including Great Crested and Little Grebes, Mallard, Gadwall and Coot now breed.	1178 - S

Bryn Tip LNR	Species rich open mosaic site. Mesotrophic grassland, heathland, wet flushed areas and gorse scrub. Skylark and Meadow Pipit are common species, while Slow-worm and Common lizard are frequently observed. Diverse invertebrate populations, particularly butterfly species. Large orchid populations (Bee Orchid, Southern Marsh-orchid and Common Spotted-orchid)	1393 – NW
Margam Moors SSSI	The last remaining example of the once extensive coastal levels in West Glamorgan. Bounded to the seaward by dunes and to landward by high ground, the meadows provide an agriculturally-managed freshwater habitat which hosts many species of plant on the edge of their geographical range, and nationally important invertebrates. Mesotrophic marsh, fen meadow and ditch communities support Flowering-rush (<i>Butomus umbellatus</i>), Frogbit (<i>Hydrocharis morsus-ranae</i>), Arrowhead (<i>Sagittaria sagittifolia</i>), Cyperus Sedge (<i>Carex pseudocyperus</i>) and Brown Sedge (<i>C. disticha</i>) on the edge of their range, with others such as Lesser Water-plantain (<i>Baldellia ranunculoides</i>), Tubular Water-dropwort (<i>Oenanthe fistulosa</i>) and Marsh Helleborine (<i>Epipactis palustris</i>) of local interest. The nationally rare beetle (<i>Haliphus mucronatus</i>), the dragonfly <i>Sympetrum sanguineum</i> the regionally rare beetle <i>Anacaena bipustulata</i> , and the water-bug <i>Corixa panzeri</i> have all been found in the ditches.	1968 - SW
Kenfig / Cynffig SAC (and SSSI)	Dune grassland. Fixed dunes with herbaceous vegetation ("grey dunes"). Atlantic salt meadows (<i>Glauco-Puccinellietalia</i>). Dunes with creeping willow, <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) Calcium-rich nutrient-poor lakes, lochs and pools. Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. Humid dune slacks Presence of Fen orchid (<i>Liparis loeselii</i>) Presence of Petalwort (<i>Petalophyllum ralfsii</i>)	3431 - S
Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC	This is one of four sites representing <i>Molinia</i> meadows in south and central Wales, one of the major UK strongholds for this habitat type. At this site, there are extensive stands of M24 <i>Molinia</i> – <i>Cirsium dissectum</i> fen-meadow, including the heathy sub-type with cross-leaved heath <i>Erica tetralix</i> , as well as other forms with a stronger representation of grasses, rushes and small sedges. Transitions to stands of more acidic <i>Molinia</i> and <i>Juncus</i> pasture, dry neutral grassland and wet scrub vegetation are well-represented. Uncommon and declining species associated with the <i>Molinia</i> meadows at this site include the nationally rare	6268 - SE

	viper's-grass <i>Scorzonera humilis</i> and the nationally scarce soft-leaved sedge <i>Carex montana</i> . The site also has Marsh fritillary butterflies (<i>Euphydryas aurinia</i>) using the site.	
Crymlyn Bog / Cors Crymlyn SAC and Ramsar	Qualifying Annex I habitats: Alder woodlands on floodplains; Calcium-rich fen dominated by great fen sedge (saw sedge); and Very wet mires often identified by an unstable 'quaking' surface. It is the largest example of valley-flood plain mire in Wales. It is also of national importance for its rich invertebrate fauna.	9942 - NW
Blackmill Woodlands SAC	Qualifying Annex I habitats: Fixed dunes with herbaceous vegetation ("grey dunes") Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) Hard oligomesotrophic waters with benthic vegetation of <i>Chara</i> spp. Humid dune slacks Qualifying Annex II habitats: Fen orchid (<i>Liparis loeselii</i>) Petalwort (<i>Petalophyllum ralfsii</i>)	9961 - E

There are 20 non-statutory designated sites within 2 km of the Site. The closest of these are NPT Watercourses SINC, NPT Ancient Semi-natural Woodland SINC and Eglwys Nunydd SINC. The 20 non-statutory designated sites are as follows:

Site name	Approximate distance (m) and direction from Site
NPT Ancient Semi-Natural Woodland SINC	3 -N
Eglwys Nunydd	22 -NE
NPT Watercourses SINC	223 -SE
NPT Watercourses SINC	442 - NE
Junction 38 Wetland Complex	320 - NE
Margam Country Park	660 - SW
Bryn Gotyre Cycleway	670 - NE
Abercerdin Wood	1013 - NE
Y Parc (North)	1084 - E
Nant-y-Crynwydd	1108 - S
Caerau West	1188 - NE
Y Parc (South)	1403 - N
Sychbant Fields	1510 - E
Cwm Cerdin SINC	1603 - NE
Cwm Cerwyn	1609 - N
Bryn Tip	1643 - E

Meadow Row, Bryn	1839 - E
Gilfach Uchaf	1939 - N
Nant-y-Castell Grasslands SINC	16311 - N
Cwm Sychbant	16311 - N

Protected and noteworthy species records

At least 227 noteworthy species are recorded from places within 2km of the Site boundary. Noteworthy species include species of principal importance that are listed under Section 7 of the Environment (Wales) Act 2016. Of these, five are amphibians, 102 are birds, two are fish, 79 are invertebrates, 21 are mammals (of these, 14 are bats) and 18 are plants.

Protected and notable species

Fish

No protected fish were recorded in the BDS, but records of two Section 7 species European eel (*Anguilla anguilla*) and brown trout (*Salmo trutta*) were identified. The on-site watercourses (eastern area) are considered unlikely to support fish.

Invertebrates

The background data search returned records of 152 invertebrate species including 63 Section 7 species one of which is also an Annex II species – Marsh Fritillary (*Euphydryas aurinia*). There are a few small discrete areas of habitats suitable to support invertebrates across the Site, though none of them are large enough to support a significant population and none of them included substantial numbers of devil's bit scabious, with which Marsh Fritillary is strongly associated.

Great crested newts (GCN)

The background data search returned records of all five common amphibian species, including GCN protected under Annex II and are priority species under Section 7 together with common toad (*Bufo bufo*). There is suitable terrestrial habitat for GCN present across the vast majority of the Site along with several waterbodies. There are also hibernation opportunities within these habitats.

Reptiles

The background data search returned records of all four common species of reptile: adder (*Vipera berus*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*) and slow-worm (*Anguis fragilis*). The study area contains suitable habitats for reptiles including less intensely grazed areas of neutral grassland and marshy grassland as well as areas of bracken and scrub.

Badger

The background data search returned records of badger, including setts, within 2 km of the Site. The study area contains suitable habitat for sett building, foraging and commuting including woodland, scrub and grassland.

Bats

The BDS returned records of at least ten species of bat within 2 km of the site, including lesser horseshoe bat (*Rhinolophus hipposideros*) and greater horseshoe bat (*Rhinolophus ferrumequinum*); both are protected under Annex II and are priority species under Section 7 together with Noctule (*Nyctalus noctula*), Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*) and Brown long-eared bat (*Plecotus auritus*). The Site was assessed as offering moderate suitability habitat for foraging and commuting bats due to abundant woodland adjacent to the Site together with small watercourses / streams present within the Site.

Hazel dormouse

The BDS contained records of hazel dormouse within 2 km of the Site. The majority of the survey area lacks suitable habitat for dormice to be present. Generally, the scrub present lacked the species diversity, structural integrity and/or connectivity required for dormice to be present. However, the large woodland adjacent to the Site does provide suitable habitat and has connectivity to hedgerows and additional woodland in the surrounding landscape so could potentially support dormice.

Otter

The background data search returned multiple records of otter within 2 km of the Site. The small watercourses / streams on the site were assessed as unsuitable as a resource for otters.

Water voles

The background data search returned records of water vole within 2 km of the site. The small watercourses / streams on the site were assessed as unsuitable as a resource for water vole.

Ornithology

The site contains suitable habitats for a wide variety of foraging and breeding birds, including species protected under Schedule 1 and those of conservation importance (priority species) in Wales (Section 7). The BDS returned records of 32 species listed under Schedule 1, of those relevant to the development include barn owl, buzzard, red kite (*Milvus milvus*), goshawk (*Accipiter gentilis*), kestrel, merlin, sparrowhawk and tawny owl.

6.2.6 Additional (secondary and tertiary) mitigation

Construction

- Hedgerows are listed under the Bridgend Local Biodiversity Action Plan and Neath Port Talbot Local Nature Recovery Action Plan, these are also listed as priority habitats on the Environment (Wales) Act 2016. Where feasible, these priority habitats should be avoided by the development.
- GCN licence (if required) to provide details of mitigation (unknown at this stage).
- Roosting bats, including a licence (if required) to provide details of mitigation (unknown at this stage).
- Hazel dormice licence (if required) to provide details of mitigation (unknown at this stage).
- Production and implementation of a Construction Environmental Management Plan (CEMP) to include the safeguard of the following receptors during construction:
 - Priority habitats.
 - Reptiles.
 - Common nesting birds (including ground nesting).
 - Foraging and commuting bats.
 - Priority species including brown hare, polecat and hedgehog.
- Pre-construction badger survey.
- Pre-construction otter survey.
- Production of a Landscape Ecological Management Plan (LEMP) outlining how the landscaping scheme will offset significant effects on legally protected species whilst will benefit biodiversity.

Operation

- Any mitigation required to protect priority habitats and species, including the passage of breeding and non-breeding birds across the site.
- Continued adherence to, and implementation of, the LEMP.
- Continued adherence to condition and monitoring requirements for European Protected Species (EPS) licence submissions for GCN, bats and hazel dormice (if required).

Decommissioning

- The potential impacts from decommissioning (removal of solar modules) will be similar to the potential impacts during construction. A Decommissioning Environmental Management Plan would be produced (to discharge a planning condition) and would include measures to safeguard ecological receptors during decommissioning; and
- Pre-decommission badger survey.

6.2.7 Description of likely significant effects

Impacts to non-statutory designated sites

The Proposed Development could result in indirect impacts to the NPT Ancient Semi-Natural Woodland SIN. The potential effects cannot be determined until the design has been finalised. No impacts have been identified between the Proposed Development and the other non-statutory designated sites within 2 km due to the absence of possible pathways and intervening distance to development works.

Habitat loss and degradation of priority habitats

The Proposed Development would result in the loss or alteration of habitat during the construction and operation phases of the development and the installation of solar modules could cause habitat degradation of grassland during the operation phase, i.e. by creating dominance of shade tolerant species. The potential direct effects cannot be determined until the design has been finalised and NVC surveys have been completed.

Protected Species

During construction of the Proposed Development, impacts from disturbance or destruction of habitat could occur, which has the potential to effect protected species. Based on the PEA, bats, birds, GCN, badger and reptiles could be affected. The significance of the potential effects cannot be determined until the presence or absence of receptors have been confirmed through further surveys.

6.2.8 Receptors/matters to be scoped into further assessment

The following receptors/elements are proposed to be scoped into the assessment. It is considered that the effects of decommission will not be greater than those at construction and operation and therefore the decommission phase has been scoped out of the assessment.

Receptor/Element	Phase	Justification
NPT Ancient Semi-Natural Woodland	Construction	There is a possibility of indirect impacts on this protected site from the development

SINC		(e.g., from run-off, dust pollution) which cannot be determined until the design is finalised.
Habitats	Construction	Effects on habitats will be considered during the construction and decommissioning phases, due to direct habitat loss and indirect effects such as disturbance.
Protected Species (except those noted in 6.2.9)	Construction	There is a possibility of direct and impacts on protected species from the development which cannot be determined until the design is finalised and the surveys have been completed.
Woodland (adjacent)	Construction	There is a possibility of indirect effects on woodland from the construction of the proposed development e.g., from dust and runoff. The significance of the effect cannot be determined until the design is finalised.

6.2.9 Receptors/ Elements to be scoped out of the assessment

The following receptors/elements are proposed to be scoped out.

Receptor/Element	Phase	Justification
Statutory Designations – All sites within 2km	All phases	There are no statutory designated sites present within the Site. No impacts have been identified between the Proposed Development and the statutory designated sites within 2 km due to the absence of possible pathways and large intervening distance to development works.
Non-statutory designations – All sites within 2 km other than NPT Ancient Semi-Natural Woodland SINC	All phases	The following non-statutory designated sites have been scoped out due to the large intervening distance and/or lack of ecological pathways.
Reptiles	All phases	Common species of reptile are known to occur on site and have been assumed to be present in all areas of suitable habitat (narrow field boundaries). Mitigation measures detailed in the CEMP will safeguard reptiles from injury or killing during vegetation clearance and site preparation works. The CEMP will detail and enshrine the

		required mitigation (displacement methodology for vegetation clearance) as part of the development permission and therefore there will be no significant impacts.
Fish	All phases	No watercourses will be lost to the Proposed Development. Embedded mitigation (including a 10 m buffer between the watercourses and any infrastructure) would ensure significant effects are avoided. Strategies as part of the CEMP will further minimise any potential effects to watercourses and as such no direct effects on fish are envisaged.
Otter	All phases	No watercourses will be lost to the Proposed Development. Embedded mitigation (including a 10 m buffer between the watercourses and any infrastructure) would ensure significant effects are avoided. The watercourses on site were assessed as unsuitable to support otters and as such no direct effects on otter are envisaged.
Water vole	All phases	No watercourses will be lost to the Proposed Development. Embedded mitigation (including a 10 m buffer between the watercourses and any infrastructure) would ensure significant effects are avoided. The watercourses on site were assessed as unsuitable to support water vole and as such no direct effects on water vole are envisaged.
Pine marten	All phases	The BDS returned records of pine martin within 2 km of the Site in Margam Forest. The majority of the Site does not provide suitable habitat for pine martin. The areas of woodland surrounding the Site may form part of a larger territory for pine martin but is not anticipated to be directly affected by the Proposed Development. Standard mitigation measures detailed in the CEMP will safeguard from injury or killing during vegetation clearance and Site preparation works.
Other priority species	All phases	Brown hare, polecat and hedgehog have the potential to be present in the works area due to the presence of suitable habitat. Standard mitigation measures detailed in

		the CEMP will safeguard these species from injury or killing during vegetation clearance and Site preparation works.
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6.2.10 Opportunities for enhancing the environment

Opportunities for restoration and enhancement of priority habitats should be explored and incorporated into the design proposals as part of the objective to deliver a biodiversity gain. This can include, but not be limited to, reduction in grazing pressures in certain key areas.

The majority of hedgerows in the survey area were either defunct or in poor condition. The planting of new hedgerows and enhancement of existing hedgerows on the Site would deliver a biodiversity benefit.

Areas of scattered and dense scrub provide habitat for a wide variety of birds, mammals, and invertebrates, especially when present alongside other habitat types such as woodland and grasslands. Where the removal of scrub should be compensated for through the planting of additional areas using species native to Wales, of local provenance and be of value to local wildlife.

If protected species are found to be present, then there is considerable scope to provide enhancement and compensation measures through the creation of new habitats, i.e., hedgerow planting for dormice, pond creation for GCN and woodland planting for bats. The requirement and specification for this would be determined by the need for EPS licensing.

The results of the ecology surveys will influence the site design and masterplan to ensure that the development provides a net benefit. This will be demonstrated in a net benefit assessment that will deliver substantial gain addressing local and regional biodiversity priorities. An ecosystem resilience assessment will also be completed.

6.2.11 Proposed assessment methodology

The ecological impact assessment (EclA) will follow the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland, referred to here as 'the CIEEM Guidelines' (CIEEM, 2018).

The significance criteria proposed for the biodiversity assessment is presented in **Appendix H**.

6.2.12 Difficulties and uncertainties

To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- As the design has yet to be finalised there is still uncertainty about where potential impacts may occur.
- Only the PEA survey has been completed so this assessment has limited baseline information particularly for protected species.

6.2.13 References

- Bright, P., Morris, P. and Mitchell-Jones, T. (2006), The Hazel Dormouse Conservation Handbook (2nd edition), Peterborough, English Nature.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland. Chartered Institute of Ecology and Environmental Management,

Winchester.

- Collins, J. (2016) Bat Surveys-Good Practice Guidelines 3rd edition. London: Bat Conservation Trust.
- Dean, M., Strachan, R., God, D. & Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Matthews and Paul Chanin. The Mammal Society, London.
- English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough
- English Nature (2002). Badgers and Development. English Nature, Peterborough.
- MAGIC gov.uk. - interactive mapping tool run by Natural England [Accessed August 2025].

6.2.14 Scoping questions

- Do you agree with the proposed study areas?
- Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?
- Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?
- Are any receptors/assets/resources not identified that you would like to see included in the EIA?
- Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?
- Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?

6.3 Cultural Heritage

6.3.1 Consultation

Historic Environment Record (HER) has been consulted in the preparation of the EIA Scoping Report for data on known historic assets. They have agreed the study area to inform the archaeological Desk-Based Assessment (DBA) and Heneb (Glamorgam Gwent) has confirmed they require a written scheme of investigation (WSI) to be produced and agreed in advance of production of the EIA's supporting desk-based baseline assessment. Pre-application advice and consultation is being sought from the following consultees regarding the scope and extent of cultural heritage and archaeology assessment as part of the EIA, including any requirement for surveys, and setting assessment viewpoint photography locations:

- Cadw
- Heneb (Glamorgam Gwent)
- Neath Port Talbot Council Conservation Officer.

The consultation bodies presented above have been contacted during the EIA process to discuss any potential mitigation requirements (and opportunities for enhancement) associated with the Proposed Development.

6.3.2 Study area

The main development area will be used to identify known and potential historic assets that may experience direct (physical) construction effects. It should be noted that no changes are anticipated for the proposed access track given that track is an existing NRW haulage route and therefore the assessment is proposed to focus on the main development area rather than the full application site in totality.

An archaeological DBA will consider the main development area and a 1 km study area from the main development area boundary to identify all known historic assets and will seek to identify areas of archaeological potential for consideration within the EIA. This 1 km study area has been agreed with Heneb, the archaeological advisor to the local authority.

A Setting Study Area (SSA) is proposed for the identification of heritage assets that may be affected by the Proposed Development through development within their setting. It will extend up to 3 km from the main development area boundary within which historic assets will be considered based on their importance and sensitivity to setting effects in order to focus the assessment on likely significant effects:

- Up to 1 km from, and including, the main development area: all designated historic assets and non-designated historic assets for which the wider setting makes a positive contribution to their significance and there is theoretical intervisibility with the Proposed Development based on the Zone of Theoretical Visibility (ZTV).
- Up to 3 km from the main development area: all Scheduled Monuments, Listed Buildings, Registered Historic Parks and Gardens and Conservation Areas, Registered Historic Landscapes and non-designated assets of recognised regional importance where there is theoretical intervisibility with the Proposed Development based on the ZTV.
- Beyond 3 km, based on the ZTV, the baseline will be 'screened' (referred to below as a 'Stage 1 desk-based study') and agreed with consultees in order to identify any assets of importance where long-distance views from or towards the asset are thought to be particularly sensitive (in the opinion of the assessor or consultees).

6.3.3 Data sources to inform the EIA baseline characterisation

The principal sources of information to inform the ES will be the HER, supplemented by relevant published documentary and cartographic material as appropriate, including sources of aerial photography. Various sources will be consulted for the collation of data including, but not limited to:

- Cadw data on designated historic assets downloaded as a digital data extract from the Welsh Government's GeoPortal website.
- Heneb HER data on historic assets within 1 km of the main development area supplied as a digital data extract on 16 July 2025.
- Conservation Areas downloaded as a digital data extract from the Welsh Government's GeoPortal website.
- NRW LiDAR data.
- LANDMAP datasets.
- Maps and plans held in the local archives.
- Relevant internet sources including National Library of Wales.
- Aerial photos held by the Central Register for Aerial Photography Wales (CRAPW) and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW).
- Readily available published sources and unpublished archaeological reports.
- Portable Antiquities Scheme (PAS) data.

At a minimum, the following locations are initially proposed for visualisations (wirelines or viewpoint photography) if the bare-earth ZTV predicts intervisibility with the Proposed Development:

- Margam Castle Grade I listed building (14170)
- St Mary's Abbey Church Grade I listed building (14148)
- Chain Home Low Radar Station, Margam scheduled monument (GM488), and
- Half Moon Camp scheduled monument (GM477).

Additional viewpoints (initially wirelines only) may also be used in the assessment of effects on the rural churches and chapels or agricultural buildings where the ZTV indicates theoretic visibility.

6.3.4 Surveys to inform the EIA baseline characterisation

The following surveys are proposed to inform the EIA:

- A targeted walkover of the main development area was carried out on 18 July 2025. This sought to confirm the location and state of preservation of previously recorded assets within the main development area, the nature of any features detected in LiDAR survey and aerial photography, and identify currently unrecorded archaeological remains in areas of potential physical impact from the Proposed Development.
- Historic assets within the SSA which the Stage 1 desk-based study identifies as potentially drawing significance from their wider setting will be visited and assessed from publicly accessible locations (if necessary) to confirm their baseline setting and to identify locations to be proposed for supporting visualisations to assist with the assessment of impacts in the EIA.
- Subsequent detailed setting assessment visits to assets identified (through the above stages of assessment) as potentially experiencing significant effects will also be carried out once wireline visualisations have been undertaken for the assessment design in order to more fully assess potential impacts and inform design.
- Geophysical survey of key areas, scope to be confirmed.

The need for, scope, and timing of intrusive evaluation will be negotiated and agreed with the statutory consultees following completion of the desk-based assessments and geophysical surveys.

6.3.5 Baseline conditions

The main development area is located within Margam Mountain Registered Historic Landscape of Special Interest (HLW (WGI/MGI) 2). There is one further Registered Historic Landscape within 3 km and that is Merthyr Mawr, Kenfig & Margam Burrows (HLW (MGI) 1) which is a landscape of Outstanding Interest.

There are two non-designated assets currently known within the main development area: Bromail post medieval Coal Level (01378w) and Cefn Crygwallt four or five medieval trackways or holloways (01069w).

There is one designated asset just beyond the main development area. Chain Home Low Radar Station (GM488) Scheduled Monument which borders the main development area to the immediate west, Half Moon Camp (GM477) Scheduled Monument is located approximately 465 m to the south east.

Within 3 km there are a further 14 scheduled monuments including a ring cairn, two cairns and a round barrow, four enclosures and two hillforts which are all prehistoric monuments. There is an early medieval inscribed cross, and the remainder are medieval including Margam Abbey, a bath house and chapel and defended enclosure.

There are 58 listed buildings including six grade I and ten grade II* within 3 km. Of these,

26 are within 1 km of the main development area. The majority are within Margam Park to the south. These are made up primarily of churches, chapels and religious buildings, of features and buildings in gardens and parks and also domestic structures.

There is one conservation area within 3 km Neath Port Talbot, and two Registered Historic Parks and Gardens: Margam Park (PGW(Gm)52(NEP)), and Talbot Memorial Park (PGW(Gm)45(NEP)).

There are 111 non-designated assets recorded in the HER within 1 km of the main development area. There is one find of a Neolithic axe, four Iron Age assets including enclosures and a round house, one early medieval cross, 18 medieval assets ranging from holy wells, agricultural remains, a deer park, dwellings and a churchyard. There are a large number of post-medieval assets including farmsteads, boundary stones, extraction pits and shafts, collieries, ponds, gardens, dwellings and settlements. There are also 14 modern assets including various structures, colliery and tramway, church, reservoir and air crash site.

6.3.6 Additional (secondary and tertiary) mitigation

Construction

Where archaeological remains within the main development area do not require preservation *in situ* and cannot be avoided through embedded mitigation, it is anticipated that additional mitigation to off-set adverse physical impacts as a result of the Proposed Development will take the form of a programme of archaeological investigation and recording.

Such a programme may include pre-commencement phases of archaeological excavation and/or archaeological “watching brief” during construction. The need for, and scope of such mitigation, will be agreed with Heneb, the archaeological advisors to NPTC and Cadw where necessary. The scope and methodology of the mitigation will be set out in a Project Design in line with Chartered Institute for Archaeologists Standards and Guidance as appropriate. Precautionary mitigation to avoid accidental direct impacts on heritage assets within the main development area during construction may include demarcating their presence using physical barriers, if appropriate, with a suitable buffer from the asset established.

6.3.7 Description of likely significant effects

Potential significant effects of the Proposed Development can arise from direct or indirect physical effects during construction works or from changes to the setting of historic assets during the operation phase. Indirect or secondary effects may also arise during the operation phase.

Direct physical effects describe those development activities that directly cause damage to the fabric of a historic asset. Typically, these activities are related to construction works and will only occur within the main development area.

Indirect effects describe secondary processes, triggered by the development, that lead to the degradation or preservation of historic assets. For example, changes to hydrology may affect archaeological preservation; or changes to the setting of a building may affect the viability of its current use and thus lead to dereliction.

An effect on the setting of a historic asset occurs when the presence of a development changes the surroundings of a historic asset in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual changes are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Effects may be encountered at all stages in the lifecycle of a development from construction to decommissioning but they are only likely to lead to significant effects during the prolonged period which is the operational life of the

development.

Potential effects on unknown historic assets will be discussed in terms of the risk that a significant effect could occur. The level of risk depends on the level of archaeological potential combined with the nature and scale of disturbance associated with construction activities and may vary between 'High' and 'Negligible' for different elements or activities associated with a development, or for the development as a whole.

The layout of the Proposed Development is still being designed and surveys to establish the archaeological resource of the main development area are ongoing. As such, there remains uncertainty regarding both the direct physical impacts on historic assets as a result of construction, and the extent of visual change within the setting of historic assets within the wider area. This has therefore resulted in assets being "scoped in" which may, following detailed design, be scoped out of the assessment as effects will have been avoided. The justification for scoping out any historic assets will be presented in the ES.

6.3.8 Receptors/matters to be scoped into further assessment

The list of receptors outlined below are groups of historic assets which will be considered during the assessment but not all are likely to experience significant effects.

Assets that have been scoped out at this stage (see **Section 6.3.9**) are those where their particular characteristics, and the contribution made by setting to their significance, will be unaffected by the Proposed Development regardless of its final layout.

Receptor/Element	Phase	Justification
Designated historic assets within or adjacent to the main development area (Chain Holme Low Radar Station)	Construction and operation	Construction activity has the potential to directly impact on this asset and the operation of the Proposed Development may impact on the contribution that setting makes to its significance, with potential for significant effects to occur.
Buildings and monuments recorded in the HER within the main development area	Construction and operation	Construction activity has the potential to directly impact on these assets and the operation of the Proposed Development may impact on the contribution that setting makes to their significance, with potential for significant effects to occur.
Currently unknown historic assets within the main development area	Construction and operation	There remains uncertainty about the extent and significance of historic assets within the main development area and therefore the potential for significant effects is unknown. These potential assets are scoped in as a precaution until further information is known.
Scheduled Monuments outside the main development area (except those scoped out in Section 6.3.9)	Operation	These assets may experience visual change in their setting during operation which could result in significant adverse effects on their cultural significance.
Listed Buildings outside the main development area (except those scoped out in Section 6.3.9)	Operation	These may experience visual change in their setting during operation which could result in significant adverse effects on their cultural significance.

Registered Historic Parks and Gardens outside the main development area (except those scoped out in Section 6.3.9)	Operation	Will be included where the Stage 1 desk-based study identifies that they are sensitive to changes in views out of, to or across the registered area, unless the “bare earth” ZTV indicates no visibility of the Proposed Development.
Conservation Areas outside the main development area, specifically Margam Park (except those scoped out in Section 6.3.9)	Operation	Conservation Areas may experience visual change in its setting during operation which could result in significant adverse effects on its character.
Registered Historic Landscape of Margam Mountain Registered Historic Landscape of Special Interest (HLW (WGI/MGI) 2)	Construction and operation	An ASIDHOL will be required to consider the impacts indirect and direct on the landscape. The landscape will also be included in the Stage 1 desk-based study to identify if it is sensitive to changes in views out of, to or across the registered area.
Registered Historic Landscape of Merthyr Mawr, Kenfig & Margam Burrows (HLW (MGI) 1)	Operation	The landscape will be included in the Stage 1 desk-based study to identify if it is sensitive to changes in views out of, to or across the registered area.

6.3.9 Receptors/matters to be scoped out of further assessment

It is not proposed that cultural heritage issues in general would be scoped out of the EIA, but where, for example, the “bare earth” ZTV indicates no visibility of the Proposed Development from a historic asset or from areas where the asset’s significance can be appreciated, this would allow the asset to be scoped out early in the assessment process. All such instances where a historic asset is scoped out of further assessment will be clearly explained within the ES.

Designated assets (such as scheduled monuments and listed buildings) and non-designated assets of the types described below will be scoped out unless otherwise stated in the assessment.

Receptor/Element	Phase	Justification
Setting effects on all historic assets within the main development area and SSAs.	Construction	Construction phase effects resulting from changes in the setting of historic assets will be temporary and no worse than the operational phase effects. Therefore, it is not considered necessary to repeat the settings assessment for the construction phase.
Small structures in the SSA such as mileposts, commemorative monuments, telephone kiosks, boundary stones, signposts, water tanks, wells etc.	Operation	These assets are not considered to draw significance from their wider landscape setting and therefore will be unaffected by the Proposed Development.

Bridges and leats	Operation	These assets will draw significance from their relationship with the transport network and relevant watercourse which will be unaffected by the Proposed Development.
Bomb craters	Construction and Operation	These assets have negligible importance and significant effects upon them are therefore unlikely.
Sites of former extractive pits including quarries	Construction and Operation	These assets have negligible importance and significant effects upon them are therefore unlikely.
Find spots	Construction and Operation	As findspots, these have been removed from the main development area and the heritage significance of their former locations will not be harmed by the Proposed Development. They will still be considered in the DBA to inform the assessment of archaeological potential.
All historic assets within the main development area and SSAs.	Decommissioning	Decommissioning will not result in impacts to any additional historic assets not already mitigated during construction and operation. Decommissioning phase effects resulting from changes in the setting of historic assets in the surrounding area will be no worse than the construction or operation phase effects. Decommissioning will reverse any adverse effects resulting from changes to the setting of historic assets during operation.

6.3.10 Opportunities for enhancing the environment

Potential enhancement opportunities include replanting of lost hedgerow boundaries and reinstatement or repair of historic walled boundaries, retention of the historic trackways and provision of information boards within the main development area.

Where residual effects remain during operation, measures to enhance the significance of historic assets not affected by the Proposed Development would provide additional beneficial effects to be counted in the planning balance.

6.3.11 Proposed assessment methodology

The EIA assessment will be carried out with reference to the following:

Legislation

- The Historic Environment (Wales) Act 2023 as the statutory tool for protecting historic assets and sustainable management of the historic environment in Wales.

Policy

- Planning Policy Wales (PPW) Edition 12, February 2024.

Guidance

- Technical Advice Note 24: The Historic Environment (May 2017).

- Cadw guidance documents: Heritage Impact Assessment in Wales (May 2017) and the Setting of Historic Assets in Wales (2017).
- Cadw's Conservation Principles (March 2011).
- NRW Guide to using the Register of Landscapes of Historic Interest.
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA 2020).
- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA 2020).

The assessment of setting effects will combine analysis of the data gathered during the desk-based assessment and site visit, photographs and any wireline visualisations of the topography and Proposed Development. The Proposed Development would result in a change to the existing baseline, which may result in impacts to heritage significance. In accordance with the EIA Regulations, the assessment would identify impacts and effects as direct or indirect, adverse or beneficial, and short-term, long-term or permanent.

Direct impacts are those which physically alter an asset and therefore its heritage significance.

Changes within the setting may alter the heritage significance of an asset by causing visual or sensory change that affects the ability to understand, experience or appreciate the asset's cultural significance. The assessment of effects resulting from change within the setting of historic assets will follow the four-stage process set out in Cadw's 'Managing Setting of Historic Assets in Wales'.

The assessment of effects will follow the significance criteria in **Appendix H**.

The residual effect is a product of the importance of the historic asset and the magnitude of impact following mitigation. The importance of a historic asset reflects any statutory or non-statutory designation or in the case of undesignated assets the professional judgement of the assessor with reference to regional research frameworks. Conclusions of the assessed magnitude of impacts is a product of the consideration of the elements of an asset and its setting that contribute to its cultural significance and the degree to which the Proposed Development would change these contributing elements. The assessment therefore reflects the varying degrees of sensitivity of different assets to change brought about by different types of development.

An ASIDHOL assessment will be required as one of the technical appendices to the ES to determine the impact on the Registered Historic Landscape of Margam Mountain (Special Interest) (HLW (WG1/MG1)) and the specific character areas which are located within the main development area.

6.3.12 Difficulties and uncertainties

To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- Existing records for the historic environment do not record all historic assets. This will be addressed through the desk-based assessment, walkover survey, and aerial investigation and mapping survey to identify previously unrecorded assets and assess the potential for below ground archaeological remains. The geophysical survey will also further investigate the potential for below ground archaeological remains.
- Any limitations as a result of inaccessibility of sources will be discussed in the ES.
- Any limitations experienced during the surveys will be discussed in the DBA and ES.

6.3.13 References

- Cadw. (2011). Conservation Principles for the sustainable management of the historic

environment in Wales. Available at: https://cadw.gov.wales/sites/default/files/2019-05/Conservation_Principles_EN_0.pdf

- Cadw. (2017a). Heritage Impact Assessment in Wales. Available at: <https://cadw.gov.wales/sites/default/files/2019-05/20170531Heritage%20Impact%20Assessment%20in%20Wales%2026917%20EN.pdf>
- Cadw. (2017b). Setting of Historic Assets in Wales. Available at: <https://cadw.gov.wales/sites/default/files/2019-05/Setting%20of%20Historic%20Assets%20in%20Wales%20EN.pdf>
- Chartered Institute for Archaeologists. (2025). Standards and Guidance series. Available at: <https://www.archaeologists.net/codes/cifa>

6.3.14 Scoping questions

- Do consultees agree with the scope and approach of the Cultural Heritage and Archaeology Assessment?
- Do consultees agree with the proposals for 'Receptors / matters to be Scoped Out of the assessment' in this Scoping Report?
- Are consultees content with the proposed Setting Study Area buffer presented in this Scoping Report?
- Do consultees wish to request any specific historic assets to be assessed in the ES?

6.4 Landscape and Visual

6.4.1 Consultation

Input from statutory consultees to inform the Landscape and Visual Impact Assessment (LVIA) has yet to be received in relation to this EIA Scoping Report. Post scoping, consultation will be carried out with the following organisations and individuals:

- NRW
- NPTC, and
- BCBC.

Agreement will be sought on the selection of initial assessment viewpoints to be used in the assessment, including the illustrative techniques to be used for any visualisations of the Proposed Development.

6.4.2 Study area

Best practice guidance for the assessment of landscape and visual effects (Guidelines for Landscape and Visual Impact Assessment – GLVIA 3) states:

"Scoping should ... identify the area of landscape that needs to be covered in assessing landscape effects. This should be agreed with the competent authority, but it should also be recognised that it may change as the work progresses, for example as a result of fieldwork, or changes to the proposal. The study area 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."

And:

"Scoping should identify the area that needs to be covered in assessing visual effect, the range of people who may be affected by these effects and the related viewpoints in the

study area that will need to be examined. The study area should be agreed with the competent authority at the outset and should consider the area from which the proposed development will potentially be visible. The emphasis must be on a reasonable approach which is proportional to the scale and nature of the proposed development.”

Further to this, NRW advises that:

“The type, form, scale, height and overall scale/spread of a development can have a large effect on the extent of likely significant visual effects.”

And:

“While the extent of visual effects are specific to the development and the landscape in which it sits, for vertical structures such as wind turbines, chimneys and masts, we are able to provide the following distances as starting points for discussion with regulators and stakeholders on search and study areas. These distances are based upon development management cases and evidence reports in relation to vertical structures’ (NRW, 2016 and White et al 2019).

For height structures under 25 m the advised search area is 3 km.

To assist in the determination of an appropriate and proportionate study area for the LVIA, a preliminary ZTV has been produced to illustrate a worst-case scenario of visibility for various elements of the Proposed Development, based on the anticipated parameters set out in **Chapter 2: Description of the Nature and Purpose of the Proposed**

Development. The purpose of the ZTVs at this stage is simply to identify the maximum possible extents of visibility and to help identify potential visual receptors.

It should be noted that the ZTVs presented in **Appendix L Figures 1-2** take account of the screening effect of significant blocks of woodland and also buildings, but do not take account of walls, hedgerows, tree lines, or smaller tree groups. As is typical for all such ZTVs, the visibility shown on the plans is exaggerated and the actual extent of visibility of any development on the main development area would be considerably more constrained than is indicated on these preliminary ZTVs.

The following ZTVs have been produced (**Appendix L**):

- **Figure 1** ZTV of the maximum extents of the solar PV modules at 3 m.
- **Figure 2** ZTV of the maximum extents of the substation at 10 m.

Based on analysis of the ZTVs, field work undertaken to date and past experience of similar projects, it is considered unlikely that there would be anything other than negligible, distant and filtered glimpses of the solar PV modules or the on-site substation beyond 5 km of the fields in which they are located and at such distances, the effects would in no circumstances be significant. In most directions, visibility would in reality be restricted to much closer than this. It is therefore proposed that a 5 km study area offset is more than adequate and proportionate for the consideration of landscape and visual effects arising as a result of the operation of the Proposed Development.

It should be noted that no changes are anticipated for the proposed access track and therefore the Site in totality.

6.4.3 Data sources to inform the EIA baseline characterisation

The LVIA will draw upon information in the following published landscape character assessments:

- NRW National Landscape Character Areas (NLCA) 38: Swansea Bay and NLCA37: South Wales Valleys;
- Neath Port Talbot Landscape Assessment (December 2004);
- LANDMAP the all-Wales Geographical Information System (GIS);
- Neath Port Talbot Landscape and Seascape Supplementary Planning Guidance (May

2018); and

- Bridgend Designation of Special Landscape Areas report (March 2010).

The LVIA will consider relevant policy and guidance contained within:

- Neath Port Talbot Local Development Plan 2011 – 2026 (January 2016); and
- Replacement Bridgend Local Development Plan 2018 to 2033 (March 2024).

6.4.4 Surveys to inform the EIA baseline characterisation

Several visits to the Site and the surrounding landscape have already been undertaken, including walking the PRoW within the main development area and establishing the closest sensitive receptors and potential views into the Site.

Further site visits will be undertaken in winter 2025/2026 to photograph the baseline views from a range of locations (viewpoints) within and surrounding the main development area to represent a range of views and visual receptors. The location of the viewpoints will be agreed through further consultation with statutory consultees (particularly NPTC).

Based on the initial study area surveys and appraisals it is not considered that any private residential properties with potential views of the Proposed Development will require access to assess the potential for visual effects on residential amenity.

6.4.5 Baseline conditions

Landscape designations

No part of the main development area or its immediately surrounding context falls within a statutory designated national landscape. The nearest National Landscape to the main development area is the Gower, which lies over 15 km to the west and would not be affected by the Proposed Development. Similarly, the Glamorgan Heritage Coast lies over 10 km to the south, but at this distance would not be affected by any development within the main development area.

The main development area is located within a locally designated Special Landscape Area (SLA), identified as SLA4 Margam. In addition, there is one other SLA coincident with the study area, identified as SLA 6: Kenfig Burrows. No other SLAs fall within the search area and ZTV and therefore do not require further study.

The Margam Mountain Historic Landscape Area (HLA) and Merthyr Mawr, Kenfig and Margam Burrows HLA lie within the study area. The HLAs will be fully considered within the heritage assessment chapter; the HLA contribute to an understanding of the landscape but would not be considered as a separate 'landscape' area.

Views from visitors to Margam Park Registered Parks and Gardens (RPG) will be considered, however, RPG from further afield within the search area and ZTV (such as Port Talbot Park) will be reviewed for visibility but appear too distant to be affected.

Relevant designations are shown in **Appendix L, Figure 6**.

Landscape character

The main development area is predominantly located within the very western boundary of National Landscape Character Area (NLCA) 37: South Wales Valleys. The most western portion of the main development area is within NLCA 38: Swansea Bay and would be visible to within the southern extents of NLCA 38 as shown in **Figure 4**. In both cases it is considered that these large national landscape character areas are too broad to undertake meaningful landscape character assessment.

The Neath Port Talbot Landscape Assessment (December 2004), undertaken by White

Consultants, provides a framework for landscape planning in the region by providing ‘a clear understanding of the landscape resources which contribute to the economic and environmental qualities of the borough’. The study is based on the LANDMAP process and will require updating in accordance with latest LANDMAP data, however, it provides an appropriate level of detail to form a starting point for further assessment.

The Landscape Character Assessment for Bridgend County Council (July 2013), prepared by LUC, again provides an appropriate level of detail to form a starting point for landscape assessment. The LCAs are shown in **Appendix L, Figure 3** whilst LANDMAP data is shown in **Appendix L, Figures 8 to 12**.

Visual receptors

Visual receptors are “the different groups of people who may experience views of the development” (GLVIA, 3rd edition, para 6.3). In order to identify those groups who may be significantly affected by the Proposed Development, an initial review of the ZTVs, baseline studies and preliminary site visits have been undertaken. When preparing the LVIA, this work will be expanded on and considered in more detail.

The different types of groups assessed will encompass local residents; people using key routes such as roads; cycle ways, people within accessible or recreational landscapes; people using PRow; or people visiting key viewpoints. The raised elevation of the main development area means that there can often be long-distance views around the study area. Proposed viewpoints are shown in **Appendix L, Figure 1** and are listed as follows:

- Viewpoint 1 – Wales Coast Path
- Viewpoint 2 – Groeswen Playing Fields, Margam
- Viewpoint 3 – PRow 9/50.PT/2 within the main development area
- Viewpoint 4 – Margam Country Park
- Viewpoint 5 – Ogwr Ridgeway Walk, and
- Viewpoint 6 – Porthcawl Coast/Kenfig Dunes.

Settlements

Port Talbot and Margam are located to the west of the Proposed Development. Due to topography (**Appendix L, Figure 5**) and intervening built form, there would be limited visibility of the Proposed Development from the settlement, particularly from ground level/lower storey views.

Small settlements in the study area are listed below; all distances given are at the closest point to the Proposed Development infrastructure:

- To the north, Cwmafan (4.5 km) and Bryn (4 km) lie outside the ZTVs for the Proposed Development.
- To the south, Egwlys Nunydd (2.4 km) and Coed Hirwaun (3.3 km) are located in the ZTVs for the solar arrays, but any on-site substation infrastructure would not be visible. Kenfig lies just within the 5 km search area but is not within the ZTV.
- To the east, Maesteg (4.3 km) lies outside the ZTVs for the Proposed Development.

Depending on the final design and layout of the Proposed Development, there is the theoretical potential for there to be views of the Proposed Development from Port Talbot, Egwlys Nunydd and Coed Hirwaun, but there is also potential through design and mitigation to minimise the view of new infrastructure.

In addition to the settlements above, the few scattered properties throughout the 5 km search area with potential views of the Proposed Development, none of which are in close proximity to the proposed area for solar PV modules or the substation, would be reviewed in conjunction with other local receptors such as PRow or local roads.

Key routes

The key routes within the 3 km study area are the:

- M4, running broadly north to south through the centre of the study area;
- A48, running north to south through the south of the study area.

Recreational routes

Recreational users of PRow would likely be the most sensitive visual receptors of any change in the landscape. These include the following:

- Users of long-distance trails, The Wales Coast Path and the Ogwr Ridgeway Walk, and
- National Cycle Network (NCN) Route No. 4 is located on, or roads adjacent to, the Wales Coast Path.

A review of the Port Talbot Council Rights of Way Map shows that there are numerous PRow within the 5 km search area, including some within the main development area. Those closest to the main development area, and most likely to be impacted, are:

- Within the main development area, Footpaths 9/44 PT/2, 9/45 PT/2, 9/51 PT/1, 9/50 PT/2, 9/50 PT/3 and 9/WCPAlt/2 (Wales Coast Path),
- To the south, Footpath 9/76 PT/1 and 9/76 PT/2 (Ogwr Ridgeway), and
- To the north, Footpath 39/42 PT/1.

Other recreational and/or tourist receptors

Other receptors to be considered within the LVIA include receptors at:

- Margam Park RPG, and
- Kenfig National Nature Reserve.

Appendix L , Figure 6 shows the location of recreational receptors and **Appendix L , Figure 7** the locations of key routes and access.

6.4.6 Additional (secondary and tertiary) mitigation

Construction

Consideration will be given to the location of the construction compound and equipment laydown areas to minimise landscape and visual effects as far as practicable. There is, however, limited potential for additional mitigation of short-term landscape and visual construction effects of the Proposed Development.

Lighting of any construction compounds will be designed to minimise visual intrusion.

Existing trees, woodlands and hedgerows would be protected in accordance with best practice for construction in proximity to trees and in accordance with relevant British Standards.

Operation

A high-quality design will be secured, firstly through careful site selection for the various components of the Proposed Development, taking account of the potential landscape and visual effects. Removal or disruption to any existing landscape fabric (e.g. trees, hedgerows) will be minimised to that which is absolutely necessary for the implementation of the Proposed Development.

A Landscape and Ecological Management Plan will be developed in accordance with the principles of good design to integrate the Proposed Development into the landscape and mitigate visual effects as far as practicable. This will be secured via planning condition attached to any future consent. An Outline Landscape and Ecological Management Plan will be produced and will be complementary to any biodiversity and other environmental objectives. The landscape design will seek to deliver landscape enhancements over and above the requirement to simply mitigate adverse effects. The Landscape and Ecological Management Plan will seek to manage and restore existing vegetation and habitats within the main development area, as well as implementing areas of new native vegetation and biodiverse habitats.

The Landscape and Ecological Management Plan will be developed in consultation with NPTC and NRW to secure the long-term management of the landscape and biodiversity strategy.

Decommissioning

This stage of the Proposed Development will be similar to the construction stage, albeit in reverse whereby the dismantled equipment will need storing within the main development area prior to removal. Given the anticipated operational duration (40 years), mitigation landscaping will have reached maturity and short-term landscape and visual effects during decommissioning will be no greater than at the construction stage. No additional mitigation is envisaged during this phase.

6.4.7 Description of likely significant effects

At this stage, prior to any formal assessment and in the absence of fixed development proposals including mitigation measures, it is acknowledged that there is the potential for significant landscape and visual effects to arise during construction, operation and decommissioning of the Proposed Development. The LVIA will therefore consider the potential effects upon:

- Landscape fabric
- Landscape character, and
- Visual receptors including residential, transport and recreational receptors.

Whilst the ZTVs presented in **Appendix L, Figures 1 and 2** illustrate theoretical visibility out to 5 km (for the solar arrays), it is likely that any significant effects would only extend across a narrower radius from the main development area boundary than this.

Based on site analysis to date and previous experience of assessing the significance of

landscape and visual effects for solar farms in similar landscapes, it is considered likely that any significant landscape and visual effects arising from the Proposed Development would be limited to within a distance of approximately 3 km.

6.4.8 Receptors/matters to be scoped into further assessment

Receptor/Element	Phase	Justification
Neath Port Talbot LCA 1: Margam Marsh (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south west of the main development area, including Margam Moors and associated sections of the Wales Coast Path and local PRow; for local residents and visitors to the area.
Neath Port Talbot LCA 3: Margam Country Park (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south of the main development area, including the upper deer park and associated sections of the Ogwr Ridgeway Walk and local PRow; for local residents and visitors to the area.
Neath Port Talbot LCA 5: Coedhirwaun and open scarp tops (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south east of the main development area, adjoining the upper deer park and associated sections of the Ogwr Ridgeway Walk and local PRow; for local residents and visitors to the area.
Neath Port Talbot LCA 6: Mynydd Bromil, Mynydd Emroch & Mynydd Dinas (See Appendix L, Figure 3)	All phases	The main development area falls within this LCA and there would be a large scale of change in localised parts of this LCA.
Bridgend LCA 14: Kenfig Dunes and Coastline (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south of the main development area, including from the Kenfig Dunes and associated sections of the Wales Coast Path and local PRow; for local residents and visitors to the area including to Kenfig NNR.
SLA 4: Margam (See Appendix L, Figure 6)	All phases	The main development area falls within this SLA which is coincident with LCA 3 and LCA 6 and includes the upper deer park and associated sections of the Ogwr Ridgeway and local PRow; for local residents and visitors to the area.
SLA 6: Kenfig Burrows (See Appendix L, Figure 6)	All phases	This SLA, which is located to the south of the main development area and is coincident with LCA 14, includes the Kenfig Dunes and associated sections of the Wales Coast Path and local PRow; for local residents and visitors to the area

		including to Kenfig NNR.
Visual receptors in the vicinity of Margam/Port Talbot	All phases	Potential views from receptors in and around the settlement of Margam/Port Talbot; for local residents and visitors to the area.
Users of the Wales Coast Path, including inland section (See Appendix L, Figure 7)	All phases	The Wales Coast Path runs broadly north to south through the centre of the study area and users would potentially have visibility of different elements of the Proposed Development from areas along the coast and further inland for over 5 km.
Users of the Ogwr Ridgeway Walk (See Appendix L, Figure 7)	All phases	The Ogwr Ridgeway Walk runs broadly east to west through to the south of the study area and users would potentially have visibility of the southern slopes of the Proposed Development for up to 2 km.
Kenfig Dunes and Kenfig NNR (See Appendix L, Figure 6)	All phases	The Kenfig Dunes and Kenfig NNR lie within the south of the study area and are publicly accessible by users of the Wales Coast Path and local PRoW. Users of these paths would potentially have visibility of the southern slopes of the Proposed Development.
PRoW 9/44 PT/2, 9/45 PT/2, 9/51 PT/1, 9/50 PT/2, 9/50 PT/3 and 9/WCPAlt/2	All phases	These footpaths lie within the main development area and would have varied views of the Proposed Development.
Footpath 9/76 PT/1 and 9/76 PT/2 (Ogwr Ridgeway);	All phases	These footpaths lie to the south of the main development area and would have views of the southern slopes of the Proposed Development.
Footpath 39/42 PT/1.	All phases	This footpath lies to the north of the main development area and would have views of the northern/western slopes of the Proposed Development.
Margam Park RPG	All phases	Margam Park RPG lies to the south of the main development area and users would potentially have visibility of the southern slopes of the Proposed Development.

6.4.9 Receptors/matters to be scoped out of further assessment

Receptor/Element	Phase	Justification
NLCA 37: South Wales Valleys (See Appendix L, Figure 4)	All phases	The main development area is located to within the very western boundary of NLCA 37 and would be visible from only a very small extents of its overall area. It is considered that this large national

		landscape character area is too broad to undertake meaningful landscape character assessment.
NLCA 38: Swansea Bay (See Appendix L, Figure 4)	All phases	The Proposed Development would be within the very eastern boundary and would be visible within the southern extents of NLCA 38. The Proposed Development would be visible from only a very small extents of its overall area and it is considered that this large national landscape character area is too broad to undertake meaningful landscape character assessment.
Neath Port Talbot LCA 2: Margam Burrows (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south of the main development area, which include users of local PRow, appear very limited and any effects would not likely be significant.
Neath Port Talbot LCA 4: Coedhirwaun (See Appendix L, Figure 3)	All phases	Potential views from receptors in the landscape to the south of the main development area, which include users of National Cycle Route 4 and local PRow, appear very limited and any effects would not likely be significant.
Margam Mountain HLA	All phases	The HLA will be fully considered within the heritage assessment chapter; the HLA contribute to an understanding of the landscape baseline but would not be considered as a separate landscape area.
Merthyr Mawr, Kenfig and Margam Burrows HLA	All phases	The HLA will be fully considered within the heritage assessment chapter; the HLA contribute to an understanding of the landscape baseline but would not be considered as a separate landscape area.
Port Talbot Park RPG	All phases	The RPG has very limited intervisibility with the Proposed Development and any effects would not likely be significant.
National Cycle Network (NCN) Route 4	All phases	Users of NCN 4 would have very limited intervisibility with the Proposed Development and any effects would not likely be significant.
A48	All phases	Users of the A48 would have very limited intervisibility with the Proposed Development and any effects would not likely be significant.
M4	All phases	Users of M4 would have very limited intervisibility with the Proposed Development and any effects would not

		likely be significant.
6.4.10 Opportunities for enhancing the environment		
A comprehensive landscape mitigation strategy for the Proposed Development will be developed and this will seek to deliver significant landscape, as well as biodiversity, enhancement.		
6.4.11 Proposed assessment methodology		
The LVIA will be undertaken in accordance with published best practice namely the 'Guidelines for Landscape and Visual Impact Assessment (Third Edition)', Landscape Institute and IEMA 2013 (GLVIA3) and associated technical guidance notes published by the Landscape Institute, as detailed below. In addition to GLVIA3, other associated technical guidance notes of relevance to the assessment published by the Landscape Institute and NRW include: • Technical Guidance Note 06/19: Visual Representation of Development Proposals, published by the Landscape Institute (2019). • Technical Guidance Note 02/21: Assessing landscape value outside national designations. • LANDMAP – the all-Wales GIS (Geographical Information System). • LANDMAP Guidance Note 46: Using LANDMAP in Landscape and Visual Impact Assessments (NRW, 2020). Wherever possible, identified effects will be quantified, but the nature of landscape and visual assessment requires interpretation using professional judgement. In order to provide a level of consistency to the assessment, the prediction of magnitude and assessment of significance of the residual landscape and visual effects will be based on pre-defined criteria. The LVIA will define the existing landscape and visual baseline environment; assess its sensitivity to change; describe the key landscape and visual related aspects of the Proposed Development; describe the nature of the anticipated changes and assess the effects arising during construction, operation and decommissioning. Although linked, landscape and visual effects are considered separately. Landscape effects derive from changes in the landscape fabric, which may result in changes to the character, whereas visual effects are the effect of these changes as experienced by people (visual receptors). The specific significance criteria to be used in the LVIA are set out in Appendix H. All above ground primary and secondary elements of the Proposed Development will be considered in the LVIA as visible features which either individually or collectively have the potential to give rise to significant landscape and visual effects. A selection of viewpoints, agreed with NPTC, will be used in the LVIA to consider effects on different receptor groups, at various distances from the main development area and to illustrate any particularly sensitive views identified through scoping. Annotated photographs will be provided for each of the assessment viewpoints used in the LVIA. The annotated photographs will accord with guidance for 'Type 1' visualisations as defined in Landscape Institute Technical Guidance Note 06/19 (TGN 06/19). A series of photomontages will be presented for key viewpoints (locations to be determined through further consultation). The photomontages will be produced using the same base photographs as the annotated photographs and accord with guidance for 'Type 3' visualisations as defined in TGN 06/19. Mitigation measures will be developed as appropriate and taken into consideration in the assessment of effects. Operational phase effects will be assessed in Year 1 and Year 10. The LVIA will conclude by summarising which if any effects are considered to be 'significant'.		

Assessment of cumulative effects

Cumulative landscape and visual effects will be assessed as appropriate. Any additional projects to be considered in the cumulative LVIA will be identified through stakeholder consultation.

6.4.12 Difficulties and uncertainties

No difficulties or uncertainties with regards the LVIA have been identified at this stage.

6.4.13 References

- Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute and Institute of Environmental Management & Assessment (2013).
- Technical Guidance Note 02/21: Assessing landscape value outside national designations.
- Landscape Institute Technical Guidance Note 06/19: Visual Representation of Development Proposals, published by the Landscape Institute (2019).
- LANDMAP – the all-Wales GIS (Geographical Information System).
- Designation of Special Landscape Areas: Bridgend County Borough Council: March 2010
- NRW National Landscape Character Areas (NLCA) 38: Swansea Bay and NLCA37: South Wales Valleys.
- Neath and Port Talbot Landscape Assessment (December 2004).
- Neath and Port Talbot Landscape and Seascapes Supplementary Planning Guidance (May 2018).
- Designation of Special Landscape Areas: Bridgend County Borough Council: March 2010.
- Neath and Port Talbot Local Development Plan (December 2024).
- Bridgend Local Development Plan (March 2024).

6.4.14 Scoping questions

- Do you agree with the proposed study areas?
- Do you agree that the data sources listed to inform the LVIA baseline characterisation are appropriate?
- Are any receptors/assets/resources not identified that you would like to see included in the LVIA?
- Do you agree with the receptors/matters that are proposed to be scoped in and out of the LVIA?
- Are there any additional viewpoints that you would like us to consider and/or illustrate as a photomontage?
- Are there any other developments which you consider it will be necessary for us to address in a cumulative landscape and visual impact assessment?

6.5 Noise and Vibration

6.5.1 Consultation

No consultation has been undertaken thus far in relation to assessment of noise or vibration impacts associated with the Proposed Development.

Post-scoping consultation will be carried out with NPTC Environmental Health (and if necessary BCBC Environmental Health) to confirm the methodology proposed for assessing noise impacts, namely the acceptable level of exceedance (if any) of the rating sound level in comparison to the background sound level.

6.5.2 Study area

For the purposes of this scoping exercise, a 500 m 'study area' around the Site was utilised for the assessment of potential impacts upon noise and vibration-sensitive receptors (NSRs) surrounding the Site. This radius was found to comprise the nearest NSRs in all directions, thus providing a worst-case scenario upon which to base the assessment. It can confidently be assumed that any potential noise impact will only be reduced at an NSR beyond those in the study area for any given direction.

Shared receptors will be assessed for cumulative impacts from nearby schemes, where the necessary information is available.

6.5.3 Data sources to inform the EIA baseline characterisation

The baseline has been informed by identification of the nearest NSRs to the Site, using a combination of satellite imagery / Google Earth and OS mapping information. Using the red line boundary for the Site, the closest receptors could then be identified in each direction, ensuring that the most potentially-affected receptors are covered and thus providing the main constraint to the Proposed Development (from a noise and vibration perspective).

6.5.4 Surveys to inform the EIA baseline characterisation

The prevailing acoustic conditions in the area were quantified by way of an environmental noise survey conducted between Thursday 24 to Monday 28 of July 2025, measuring typical day and night-time levels during both midweek and weekend periods.

All sound measurements were undertaken by a consultant certified as competent in environmental sound monitoring, and, in accordance with the principles of British Standard 7445:2003 'Description and measurement of environmental noise' (British Standards Institute, 2003). Additionally, all sound measurement equipment used during the survey conformed to Type 1 specification of British Standard 61672:2013 'Electroacoustics. Sound level meters. Part 1 Specifications' (British Standard Institute, 2013).

No further baseline noise surveys are required based on the current Site proposals.

6.5.5 Baseline conditions

The existing noise environment at the nearest NSRs is currently governed by road traffic travelling along the M4. Underlying contributions were also audible at each measurement position, comprised of natural sources such as birdsong and wind-induced vegetation movement. These contributions are likely to have marginally increased in dominance during the night-time when traffic levels and associated noise emissions from the motorway were lower.

The locations of the measurement positions used during the survey, relative to the nearest NSRs (which are all residential and highly sensitive) is displayed in **Appendix M**.

The baseline noise survey at the Site has revealed that L_{A90} background sound levels across

the western portion of the Site (toward the M4) are in the high-40s during the day and low-40s during the night; towards the east of the Site (away from the M4), levels are lower with mid-30s measured during the day and low-30s measured during the night-time (A- weighted decibels).

6.5.6 Additional (secondary and tertiary) mitigation

Construction

The following noise control measures will be committed to in the CEMP.

It is anticipated that construction hours would be limited to 0800 to 1800hrs Monday to Friday; 0800 to 1300 on Saturdays; with no working on Sundays or bank holidays. Any working outside of these times would be subject to written, prior approval from the Local Planning Authority. With respect to the minimisation of acoustic disruption arising from construction activity, the following controls would be employed:

- Effective co-ordination and time management of construction operations to avoid noise nuisance to surrounding uses;
- Early and helpful communications with the surrounding receptors and Local Planning Authority to be contacted four weeks in advance of the construction phase, to assist reducing potential for and in managing any complaints arising during the demolition and construction works of; and
- Undertaking of all works in accordance with Best Practice Measures (BPM) as stipulated in the Control of Pollution Act 1974.

Typically, adopting BPM would reduce overall construction noise levels by approximately 5 dB (British Standards Institute, 2014).

Whilst traffic movements during the construction phase are expected to be very low in the context of the existing traffic baseline, management of deliveries and removal of material off-site will still be as follows:

- No idling engines when vehicles are awaiting loading/unloading;
- Controlling the discharge of trucks from Site to avoid congestion; and
- Implementing traffic management systems at the entrance to the Site at all times to control the traffic into the Site.

Should any non-routine activities be identified that would make it impracticable to work to the target criterion, provisions would be set out in advance and with the agreement of the Local Planning Authority, to reduce and control the effect.

Operation

Various mitigation methods can be explored in order to reduce noise impact during the operational phase. Mitigation may be built-in (mitigation by design), specifying maximum sound power levels for plant items, which limits the noise emissions at source and can ensure no/low impact at the nearest receptors.

Alternatively, methods such as screening by using acoustic fences or landscape features (e.g. bunds) may also be implemented to reduce specific sound levels at the receptor positions. These are not likely to be considered due to the existing landscape of the area, as well as the possibility to mitigate at source, before operational plant noise is in the environment.

Decommissioning

The noise impact of the decommissioning works will be no greater than those of the construction works, and similarly it can be limited by way of application of BPM and limiting works to daytime hours.

6.5.7 Description of likely significant effects

Construction

The Proposed Development will result in noise generation during the construction stage. Noise generating construction activities include the use of large earthmoving/lifting equipment, plus an increase in vehicle/HGV numbers along the road network and new access tracks. Any effects during this stage would be temporary.

The Site and its environs are rural and sparsely populated; however, there are identified residential properties located within 220 m of the Site boundary. These properties are anticipated to represent the key acoustic constraints to the Proposed Development and as such, embedded mitigation would be incorporated into the design to ensure the final solar farm layout does not introduce significant plant and consequent construction activity concentrations in the areas closest to these receptors.

It is envisaged that noise generated during the construction stage will be limited to the daytime working hours stated within a CEMP as mentioned above. With reference to British Standard (BS) 5228 Part 1 (The British Standards Institution, 2009a), it is expected that a daytime construction noise limit of 65 dB $L_{Aeq,10hour}$ would apply at the nearest human receptors. Due to the nature of the emerging design, low intensity of construction activity associated with solar farm construction and separation distances involved, it is highly unlikely that this limit would be exceeded by construction noise from the works for any prolonged periods of time. On this basis, no significant effects are expected to arise at noise sensitive receptors during the construction phase.

Operation

During the operational phase, the Proposed Development is likely to generate noise from the inverter and transformer stations; however, the design will respond to the acoustic constraints of the area and ensure that separation distances to any inverter stations are maximised, with plant selection being made on an acoustically appropriate basis, to ensure that acoustic amenity is adequately protected. Guidance from BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial noise' (The British Standards Institution, 2019) as well as BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' will be drawn upon, at a minimum.

Despite the relatively high background sound levels resulting from the close proximity of the M4, there is the potential for significant adverse impacts should operational noise not be adequately mitigated. Consequently, the Proposed Development will be informed by a noise assessment to inform the level of mitigation required.

Decommissioning

Like the construction stage, the Proposed Development will result in temporary noise generation during the decommissioning stage. Similarly, the closest properties to the Site are anticipated to represent the key acoustic constraints to the development and as such, embedded mitigation would be employed to avoid introducing significant plant and consequent decommissioning activity concentrations within the areas closest to these receptors.

6.5.8 Receptors/matters to be scoped into further assessment

Receptor/Element	Phase	Justification
Residential Receptors - Noise	Operational	Potential for significant noise effects if sound source levels for the electrical infrastructure/hardware installed onsite is not sufficiently low or mitigated.
6.5.9 Receptors/matters to be scoped out of further assessment		
Receptor/Element	Phase	Justification
Residential Receptors - Vibration	Construction, Operation and Decommissioning	Any vibration during the construction and decommissioning phases will be driven by the operation of mini-piling plant which, at a distance of over 220 m from the NSR will not produce noticeable vibrations.
Residential Receptors - Noise	Construction and Decommissioning	Due to embedded mitigation through design and the separation distances from NSR, construction and decommissioning activities are highly unlikely to exceed BS5228 limits for any prolonged periods of time. Therefore, significant effects are not anticipated. The implementation of secondary and tertiary mitigation identified in a CEMP, including application of BPM would further reduce any effects at residential receptors.
Road traffic	Construction, Operation and Decommissioning	Construction traffic and changes in road traffic levels associated with the construction and decommissioning phases are anticipated to be minimal. Changes in road traffic flows required to generate a significant effect are substantial, in that a doubling of traffic on nearby roads would typically increase the noise level by 3 dB, and significant effects would only be concluded with a greater increase than this. Therefore, significant noise effects from road traffic are not anticipated to be significant during either the construction or decommissioning phases. The increase in road traffic during operation phase are likely to be negligible, with vehicles only likely to be required for routine maintenance.
6.5.10 Opportunities for enhancing the environment		

As new noise sources will be added to the environment, there is no realistic opportunity to improve the sound environment. The cessation of agricultural activities on the site may provide some localised benefit but this is not expected to be significant and will not be quantified through the assessment.

6.5.11 Proposed assessment methodology

The operational assessment would consider noise from the inverter/transformer stations, 132kV substation and switchgear stations, and DNO control room.

BS 4142:2014+A1:2019 Method for rating and assessing industrial and commercial sound sets out a method to assess the likely effect of sound from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises, on people who might be inside or outside a dwelling or premises used for residential purposes in the vicinity.

The procedure contained in BS 4142 for assessing the effect of sound on residential receptors is to compare the measured or predicted sound level from the source in question, the $L_{Aeq,T}$ 'specific sound level', immediately outside the dwelling with the $L_{A90,T}$ background sound level.

Where the sound contains a tonality, impulsivity, intermittency and other sound characteristics, then a correction depending on the grade of the aforementioned characteristics of the sound is added to the specific sound level to obtain the $L_{Ar,Tr}$ 'rating sound level'. A correction to include the consideration of a level of uncertainty in sound measurements, data and calculations can also be applied when necessary.

BS 4142 states: *"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs"*.

An estimation of the impact of the specific sound can be obtained by the difference of the rating sound level and the background sound level and considering the following:

- *"Typically, the greater this difference, the greater the magnitude of the impact."*
- *"A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context."*
- *"A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context."*

"The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."

During the daytime, the assessment is carried out over a reference time period of 1-hour. The periods associated with day or night, for the purposes of BS 4142:2014+A1:2019, are considered to be 07:00 to 23:00 and 23:00 to 07:00, respectively.

Assessment of cumulative effects

In terms of assessing cumulative impact, the relative change in ambient sound level is calculated for each shared receptor. The Institute of Environmental Management & Assessment (IEMA) (now ISEP) Guidelines define 'Noise Impact' as the difference in the acoustic environment before and after the implementation of the proposals, also known as the magnitude of change. In circumstances where a noise environment may be altered by

addition or removal of a noise source, considered to be largely anonymous or within the prevailing acoustic character of an area, for example, changes to traffic quantum or patterns, it is normal to consider this relative change in ambient noise level.

The criteria set out in IEMA Guidelines reflect the key benchmarks that relate to human perception of sound. A change of 3 dB(A) is generally considered to be the smallest change in environmental noise that is perceptible to the human ear. A 10 dB(A) change in noise represents a doubling or halving of the perception of loudness. The difference between the minimum perceptible change and the doubling or halving of the perceived noise level is split to provide greater definition to the assessment of changes in noise level. A change of 5 dB or more is considered to be significant.

It is considered that the criteria specified in IEMA Guidelines provide a good indication as to the likely significance of changes in noise levels in this case and can be used to inform the context in which the sound occurs in order to assess the impact of noise from the Proposed Development.

6.5.12 Difficulties and uncertainties

To ensure transparency within the EIA process, the following difficulties and uncertainties have been identified:

- Due to the time lag between planning and procurement of equipment, the specific plant components for the operation of the site cannot be stated. As technology in this sector is constantly evolving and improving, the assessment considers candidate plant data, with known acoustic properties that will serve as a limit for the eventual specification and design. It is expected that validation of assessment findings can be completed at a later date post grant of planning permission.

6.5.13 References

British Standards Institute (2014) BS 5228-1:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Part 1: Noise

British Standards Institute (2014) BS 5228-1:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration

British Standards Institute (2019) BS 4142+A1:2019 – Methods for rating and assessing industrial and commercial sound

British Standards Institute (2014) BS 8233: 2014 – Guidance on sound insulation and noise reduction for buildings

British Standards Institute (2003) BS 7445: 2003 – Description and measurement of environmental noise

British Standards Institute (2013) BS 61672: 2013 – Electroacoustics. Sound level meters. Part 1 Specifications

Institute of Environmental Management and Assessment (2014) Guidelines for Environmental Noise Impact Assessment. Version 1.2

6.5.14 Scoping questions

- Do you agree with the proposed list of consultees?
- Do you agree with the proposed study areas?
- Do you agree that the sources listed to inform the EIA baseline characterisation are appropriate?
- Do you agree that the surveys completed to inform the EIA baseline characterisation are appropriate?
- Are any receptors/assets/resources not identified that you would like to see included in the noise assessment?
- Do you agree with the proposed mitigation measures and is this mitigation appropriate?
- Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIA?

7 CUMULATIVE EFFECTS

7.1 Proposed Assessment Methodology

- 7.1.1 Paragraph (5)(e) of Schedule 4 of the EIA Regulations 2017 states that the Environmental Statement should include *“a description of the likely significant effects of the development on the environment resulting from... the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources”*.
- 7.1.2 Regulation 4(2) states that the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors: population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape. Regulation 4(2)(e) refers to the need to assess the interaction between those factors.
- 7.1.3 There is no widely accepted methodology or best practice for assessing cumulative effects, although various guidance documents exist. Relevant guidance has been considered, including from the Institute of Environmental Management and Assessment (IEMA) (2020). The proposed assessment methodology also reflects that set out in the Nationally Significant Infrastructure Projects (NSIP): Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024) formerly, Planning Inspectorate’s Advice Note Seventeen: Cumulative Effects Assessment.
- 7.1.4 The following approach will be adopted for the assessment of cumulative effects, based on previous experience, the types of receptors being assessed, the nature of the Proposed Development, the other developments under consideration and the information available to inform the assessment.
- 7.1.5 The following types of cumulative effects will be considered in accordance with the EIA Regulations 2017 and best practice guidance:
- Intra-project combined effects – the interaction and combination of different environmental residual (post-additional mitigation) effects from within the Proposed Development affecting a receptor; and
 - Inter-project cumulative effects – the combined residual (post-mitigation) effects of the Proposed Development and other projects on a single receptor/resource, considering the deviation from the baseline conditions at common sensitive receptors/resources as a result of changes brought about as a result of the Proposed Development in combination with one or more other approved (committed) developments.

INTRA-PROJECT COMBINED EFFECTS

- 7.1.6 The approach to the assessment of interactions of environmental effects will consider the changes in baseline conditions at common sensitive receptors (i.e. those receptors that have been identified as experiencing likely significant effects by more than one environmental factor) due to the Proposed Development. The assessment will be based upon residual (post-additional mitigation) effects of ‘**slight/minor**’ or greater significance only. The study area for the assessment will be informed by the study areas for the individual factor assessments.
- 7.1.7 The assessment of the intra-project combined effects will be undertaken using a two-stage approach:

Stage 1 - Screening

- Screening will be undertaken to determine whether a sensitive receptor is exposed to more than one type of residual (post-additional mitigation) effect during all phases of the Proposed Development. Those common sensitive receptors exposed to two or more types of residual effects, with significance of '**slight/minor**' or greater, will be taken forward to Stage 2 of the assessment.
- If there is only one type of effect on a sensitive receptor (i.e. only one technical chapter has identified effects on that sensitive receptor), then it will be considered that there are no potential intra-project combined effects, and the sensitive receptor will not be taken forward to Stage 2 of the assessment.

Stage 2 – Assessment of intra-project combined effects

- A quantitative assessment of the overall significance of the cumulative effects on common sensitive receptors identified at Stage 1 will be undertaken based on technical information provided in the technical chapters and accompanying appendices as well as professional judgement. Given that the types of effects may be very different in some cases, a quantitative assessment may not be possible, and it may be necessary to apply professional judgement in determining the significance of each individual effect.
- The evaluation at the receptor level will consider: the magnitude of change at the common receptor; previously identified sensitivity; duration and reversibility of interaction. The focus will be on determining whether the change in the level of effect is likely to be significant or not.

INTER-PROJECT CUMULATIVE EFFECTS

- 7.1.8 The approach to the assessment of inter-project effects will consider the deviation from the baseline conditions at common sensitive receptors as a result of changes brought about as a result of the Proposed Development in combination with one or more other approved (committed) developments. The assessment of the inter-project effects will be based upon the residual (post-additional mitigation) effects that have been identified in the various factor assessments for the Proposed Development, as well as available environmental information for the approved (committed) developments.
- 7.1.9 In accordance with Planning Inspectorate's Advice on Cumulative Effects Assessment two clear stages will be taken in identifying the list of approved (committed) developments which will be included within the inter-project cumulative effects assessment:
- Stage 1: establish a long list of approved (committed) developments based on appropriate spatial and temporal limits.
 - Stage 2: apply a clear rationale to establish a short list of approved (committed) developments which, in combination with the Proposed Development, have the potential to result in a significant cumulative effect for inclusion within the assessment.

Stage 1: Long list methodology

- 7.1.10 The following criteria will be used to establish the 'long list' of approved (committed) developments, as applies at the time of submitting the planning application for the Proposed Development:
- Schemes that are under construction but that will not be completed prior to the Proposed Development commencing (N.B. consideration will be afforded on a

case by case basis to whether schemes that are under construction form part of the existing baseline or not, to avoid double counting)

- Schemes with planning permission within the last five years³, but not yet implemented
 - Submitted applications but not yet determined
 - Refusals subject to appeal procedures not yet determined, and
 - EIA development not yet submitted but subject of a EIA scoping request.
- 7.1.11 Development projects that are at EIA screening stage at the time of submitting the planning application for the Proposed Development will not be considered, as they are not considered 'approved'.
- 7.1.12 Where an approved (committed) development meets one of the above criteria, it will be taken forward for further consideration against the following spatial limits (based on professional judgement) to form the long list of approved (committed) developments, as at the time of submitting the planning application for the Proposed Development:
- Employment developments: must lie within the Zone of Influence (Zol) of the Proposed Development
 - Residential developments: must comprise 10+ dwellings and lie within the Zol of the Proposed Development
 - Minerals and waste applications: must lie within the Zol of the Proposed Development
 - Nationally Significant Infrastructure Projects or Developments of National Significance developments⁴: must lie within the Zol of the Proposed Development
 - Transport infrastructure developments⁵: must lie within the Zol of the Proposed Development, and
 - Approved energy infrastructure developments must lie within the Zol of the Proposed Development.
- 7.1.13 The Zol is defined here as the study area for each environmental factor considered in the EIA for the Proposed Development. The proposed environmental factor specific study areas are stated in **Table 7.1**.

Table 7.1 Proposed Zone of Influence

Factor	Zone of Influence
Biodiversity	The Site plus a 10 km buffer.
Cultural Heritage	The main development area plus a 1 km buffer.
Landscape and Visual	The main development area plus a 5 km buffer.

³ A five-year period is considered a reasonable time period to capture all approved developments that still have the potential to be built. Developments with planning permission older than five years will likely have been built or will not likely be built at all

⁴ As defined by the Planning Act 2008 (as amended) and the Planning (Wales) Act 2015 and the Developments of National Significance (Wales) Regulations 2016 (as amended).

⁵ Trunk roads or motorways only, as smaller transport infrastructure proposals would not likely have a significant cumulative effect.

Noise and Vibration	The Site plus a 500 m buffer.
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- 7.1.14 The search area for the long list of approved (committed) developments will be based on the greatest Zol in terms of distance. A planning application search will be conducted to identify approved (committed) developments using relevant planning portals.
- 7.1.15 An initial review of planning portals has been undertaken to identify relevant approved (committed) developments. **Table 7.2** identifies the non-exhaustive list of committed developments that will be considered as part of the long-list.

Table 7.2 Identified Approved (Committed) Developments

Approved (Committed) Developments	Status
Y Bryn Wind Farm – PEDW Ref: DNS/3264571	Submitted and Recommended
Y Bryn Grid Connection – PEDW Ref: DNS CAS-04421-B8S4Q5	Scoping Submitted
Melin Court Wind Farm – NPTC Ref: P2014/0883	Approved
Foel Trawsnant Wind Farm – PEDW Ref: CAS-02505-N3T6M4	Scoping Submitted
Mynydd Fforch-Dwm Wind Farm – PEDW Ref: DNS/3255801	Approved
Mynydd Ty-talwyn Energy Park – PEDW Ref: DNS CAS-03018-G7G6H7	Scoping Submitted / Pre-application Consultation Documents Publicised
Upper Ogmere Wind Farm – PEDW Ref: DNS/3213662	Approved
Eirlys Solar Farm – PEDW Ref: DNS CAS-01977-L5K6R7	Scoping Submitted
Crown Wharf Port Talbot Docks – NPTC Ref: P2023/0858	Submitted
Land off J38 of the M4 Metal Processing Facility – NPTC Ref: P2021/1255	Approved
Port Talbot Steel Works, Electric Arc Furnace – NPTC Ref: P2024/0711	Approved
Baglan Way Industrial Unit – NPTC Ref: P2022/0470	Approved

- 7.1.16 It is recognised that NPTC and BCBC as the local planning authority may be aware of additional proposals not yet fully in the public domain and hence comment is sought on any further developments that should, in the authority's opinion, be included in the cumulative effects assessment process.
- 7.1.17 Only if the approved (committed) developments meet the Stage 1 criteria will they then been taken forward to Stage 2.

Stage 2: Short list methodology

- 7.1.18 Following the formation of the long list, the eligible approved (committed) developments identified require further assessment (Stage 2) to establish a short list of approved (committed) developments which, in combination with the Proposed Development, have the potential to result in significant cumulative effects.
- 7.1.19 The criteria used to determine whether to include or exclude an approved (committed) development on the short list will reflect the process established by the Planning Inspectorate's Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment guidance. Accordingly, it will address the following:
- **Temporal scope:** This will relate to the relative construction, operation and decommissioning programmes of the approved (committed) developments identified in the ZOI together with the Proposed Development programme, to establish whether there is overlap and any potential for interaction.
 - **Scale and nature of development:** This will relate to the scale and nature of the approved (committed) developments identified in the ZOI and how they are likely to interact with the Proposed Development. Statutory definitions of major development and EIA screening thresholds may be of assistance when considering issues of scale.
 - **Other factors:** The Applicant should consider whether there are any other factors, such as the nature and/or capacity of the receiving environment that would make a significant cumulative effect with 'other existing development and/or approved development' more or less likely and may consider utilising a source-pathway-receptor approach to inform the assessment.
 - **Documentation:** The reasons for excluding any development from further consideration will be clearly recorded. This will provide decision makers, consultation bodies and members of the public with a clear record of 'other existing development and/or approved development' considered and the applicant's decision making process with respect to the need for further assessment.
- 7.1.20 Planning Inspectorate's Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment suggests that professional judgement may also be used to supplement the threshold criteria and in order to avoid excluding developments that are:
- Below the threshold criteria limits but has characteristics likely to give rise to a significant effect; or
 - Below the threshold criteria limits but could give rise to a cumulative effect by virtue of its proximity to the Proposed Development"
- 7.1.21 Taking the above into consideration, the approved (committed) developments on the long list will be reviewed against the following criteria to form the short list of approved (committed) developments, as at the time of submitting the planning application for the Proposed Development:
- **Criteria 1:** The approved (committed) development has a construction, operational and/or demolition phase that is concurrent with the Proposed Development
 - **Criteria 2:** The approved (committed) development and the Proposed Development share common sensitive receptors/resources which are assessed and described in the accompanying environmental documentation, and have the potential to be significantly affected by the combination of the approved (committed) development and the Proposed Development, and

- **Criteria 3:** The approved (committed) development has sufficient environmental assessment information freely and publicly available to inform the inter-project cumulative effects assessment. The assessment of each approved (committed) development on the short list will be proportionate to the environmental assessment information available (*N.B: An attempt will not be made to assess the potential environmental effects of any other development to inform the inter-project cumulative effects assessment. If there is an approved (committed) development that it is known will be progressed but has insufficient environmental assessment information, it still may be prudent to consider it in the inter-project cumulative effects assessment. This might take the form of listing the project and why it hasn't been considered in detail, or the potential cumulative effect could be discussed at a high level (qualitatively) using professional judgement*).
- 7.1.22 Where an approved development meets all of the above criteria, it will be taken forward for further consideration in the assessment.

7.2 Determining significant cumulative effects

- 7.2.1 There is no formal guidance on the criteria for determining significance of cumulative effects. The following principles will be considered when assessing the significance of cumulative effects in relation to both intra-project and inter-project cumulative effects:
- Is there an intra-project and/or inter-project effect on any receptors/resources
 - The nature of the receptors/resources affected
 - How the impacts identified combine to affect the condition of the receptor/resource
 - The probabilities of the impacts occurring in relation to each other in such as way so as to produce a cumulative effect, considering the extent and duration of the impact change
 - The ability of the receptor/resource to absorb further impacts, and
 - Is the level of effect different to that considered at the project level and is the in-combination effect significant or not.

7.3 Difficulties and uncertainties

- 7.3.1 The assessment of inter-project cumulative effects will be limited to publicly available information obtained from the relevant planning applications on the relevant planning portals. For some of the identified approved developments, relevant information for this assessment may not be available. Where this is the case, the inter-project cumulative effects assessment will be based upon assumptions and professional judgement, and some statements made would rely on the review of mitigation measures proposed as part of the approved (committed) developments rather than the Proposed Development.
- 7.3.2 Where information on the temporal scope of an approved (committed) development is not available, or is uncertain, the assumption used in the assessment will be based on a reasonable worst case scenario. Most typically this would be that the approved (committed) development would be constructed concurrently with the Proposed Development. However, there may be instances where a different assessment scenario is considered more appropriate.

- 7.3.3 The assessment of the likely cumulative effects of the Proposed Development and the Y Bryn development (wind farm and grid connection) will be a particularly important component of the EIA, given the proximity of the developments and the utilisation of the same access tracks. Therefore, where appropriate, consideration will be given to the likely effects associated with the:
- Proposed Development being constructed and commissioned in advance of the Y Bryn Wind Farm construction commencing, and
 - Y Bryn Wind Farm and the Proposed Development being constructed and operated concurrently.
- 7.3.4 It is not considered necessary to assess a scenario where the Y Bryn Wind Farm has been constructed and is operational in advance of construction works commencing for the Proposed Development as this scenario would not involve any additional highways effects beyond those that will already have been assessed for the Proposed Development.

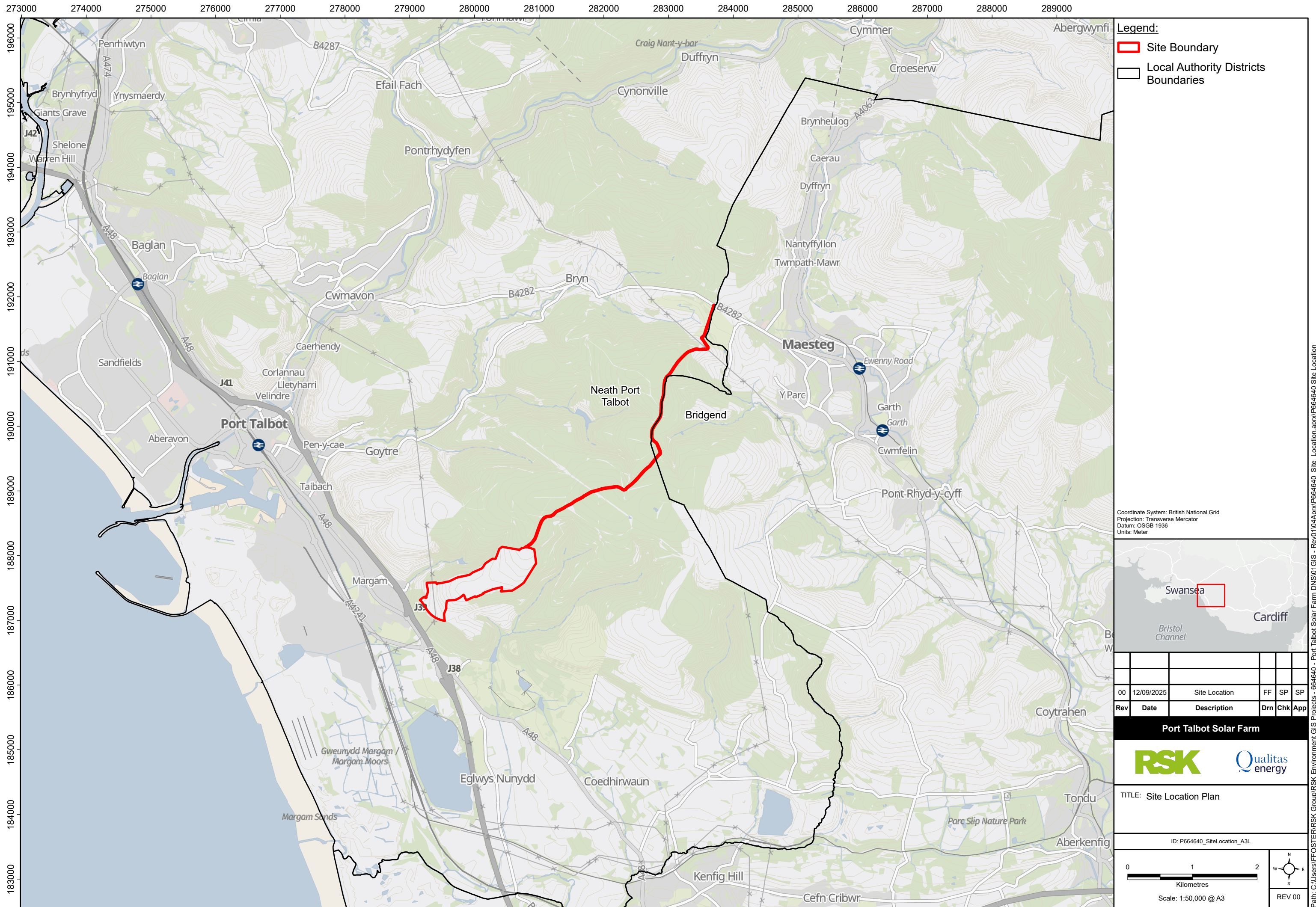
7.4 References

Institute of Environmental Management and Assessment (now ISEP) (IEMA). (2020). Demystifying Cumulative Effects. Available at: <https://www.iema.net/media/nbsdjhlf/ia-outlook-journal-vol-7.pdf>

Planning Inspectorate (2024, updated March 2025) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: [Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - GOV.UK](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115444/Nationally_Significant_Infrastructure_Projects_Advice_on_Cumulative_Effects_Assessment_-_GOV.UK.pdf)

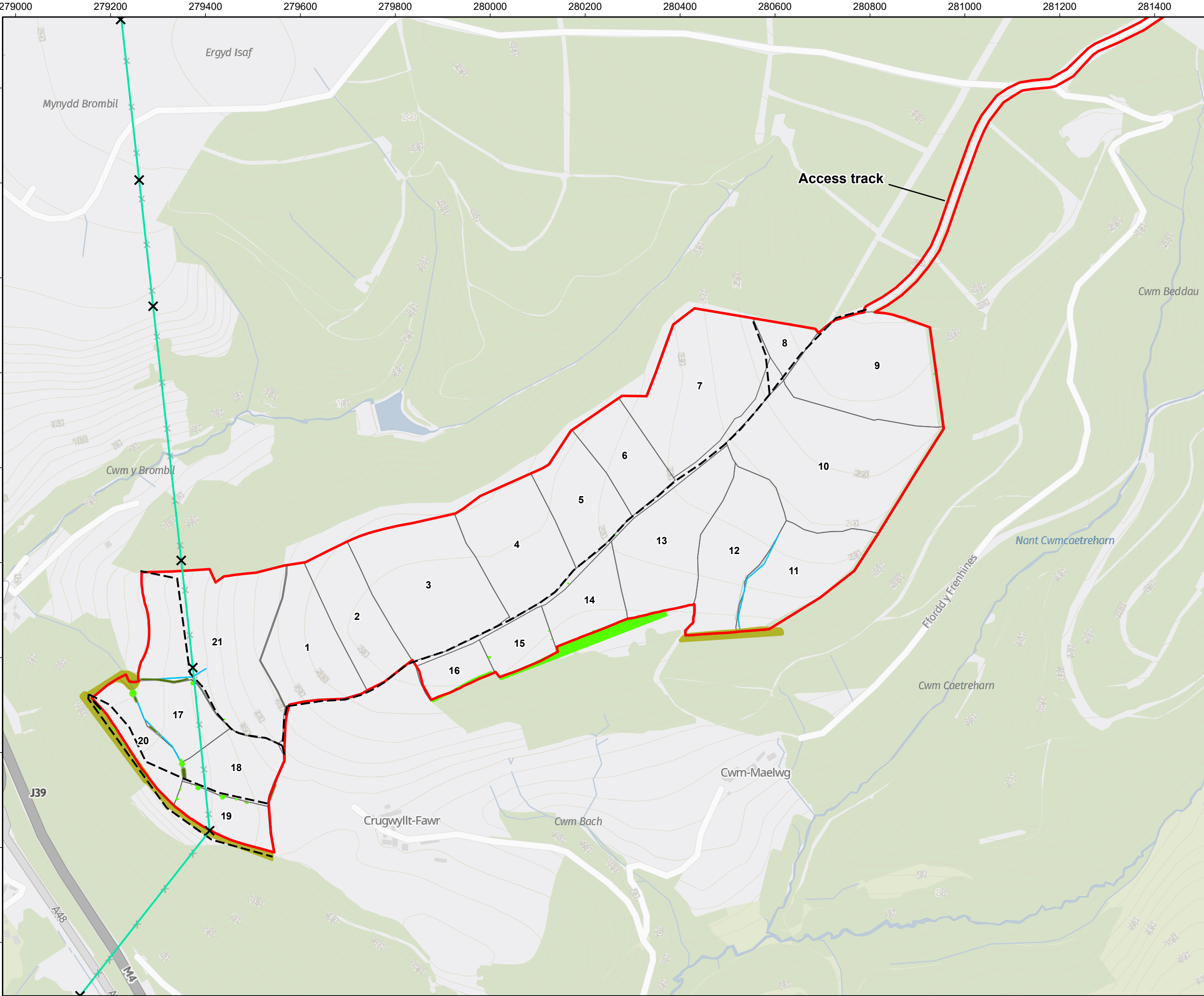
APPENDIX A

PROPOSED DEVELOPMENT LOCATION



APPENDIX B

EXISTING SITE PLAN



- Legend:**
- Site Boundary
 - Pylon
 - Overhead lines
 - Public Rights of Way (PRoW)
 - Watercourses
 - Field Boundaries
 - Hedgerows
 - Trees
 - Woodland

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



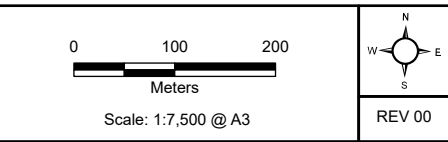
00	29/09/2025	Existing Site Plan	FF	SP	SP
Rev	Date	Description	Drn	Chk	App

Port Talbot Solar Farm



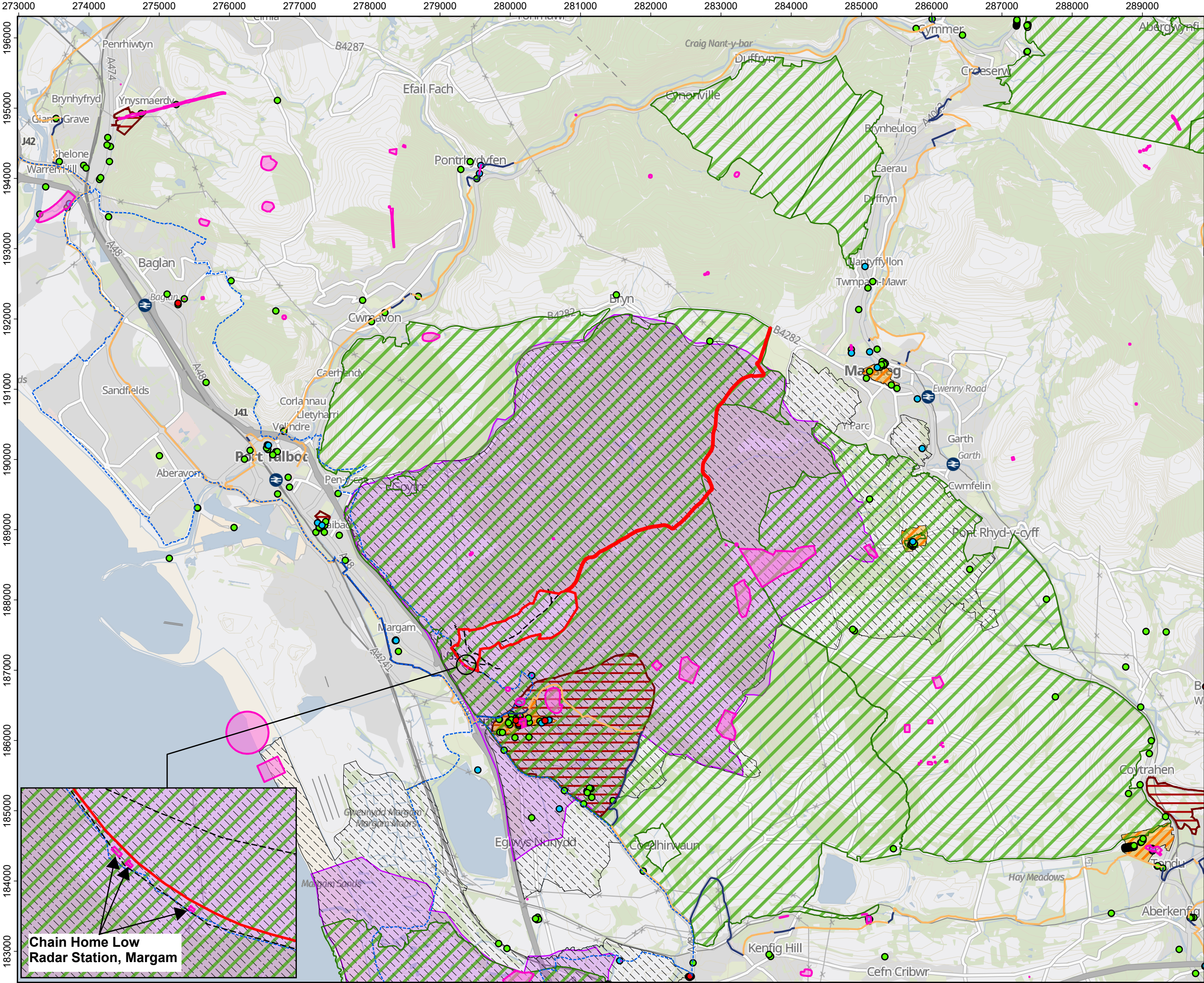
TITLE: Existing Site Plan

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APPENDIX C

ENVIRONMENTAL AND PLANNING FEATURES



Legend:

- Site Boundary
- Listed Buildings
 - I
 - II
 - II*
- Public Right of Way
- Coastal Path
- National Cycle Network
 - TrafficFree
 - OnRoad
- Scheduled Monuments
- Special Landscape Areas
- Conservation Areas
- Registered Parks and Gardens
- Historic Landscape Area
- Registered Landscapes of Outstanding and of Special Interest

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



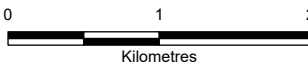
Rev	Date	Description	Drn	Chk	App
00	21/08/2025	First Draft	FF	SP	SP

Port Talbot Solar Farm

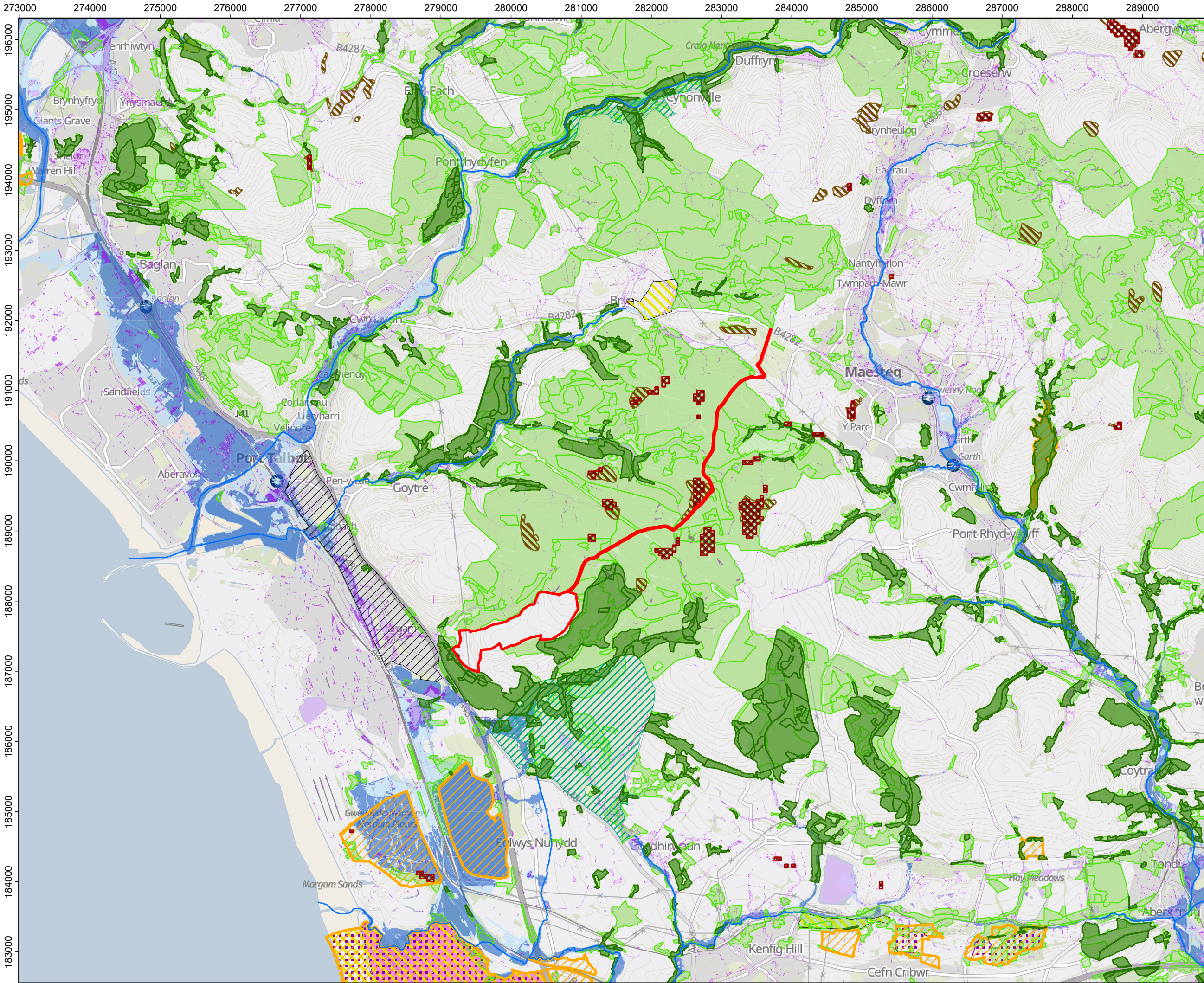


TITLE: Designations and Sensitivities (Heritage, Landscape and Visual)

ID: P664640_HistoricLandscapeVisual_Constraints_A3L



REV 00



- Legend:**
- Site Boundary
 - Main Rivers
 - Peatlands of Wales
 - Unified Peat Map of Wales
 - Ancient Woodland Inventory 2021
 - Sites of Special Scientific Interest
 - National Forest Inventory (2023)
 - Country Parks
 - Special Areas of Conservation
 - Local Nature Reserves
 - National Nature Reserves
 - Air Quality Management Areas

Flood Zone Surface Water and Small Watercourses:

- Flood Zone 2
- Flood Zone 3

Flood Zone Rivers:

- Flood Zone 3
- Flood Zone 2

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



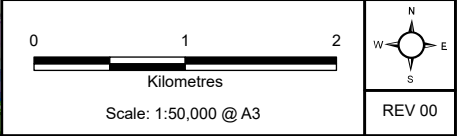
00	21/08/2025	First Draft	FF	SP	SP
Rev	Date	Description	Drn	Chk	App

Port Talbot Solar Farm



TITLE: Designations and Sensitivities (Ecology, Land and Soils, Water and Air Quality)

ID: P664640_EcoGeoHydro_Constraints_A3L



APPENDIX D

INDICATIVE SITE LAYOUT

APPENDIX E

PROPOSED CONSTRUCTION ROUTE

APPENDIX F

PROPOSED STRUCTURE OF THE ENVIRONMENTAL STATEMENT

The proposed structure of the Environmental Statement is set out as follows:

Volume I – Non-Technical Summary

Volume II – Main Written Statement

Chapter 1: Introduction

Chapter 2: Proposed Development Description

Chapter 3: Environmental Context and Reasonable Alternatives Considered

Chapter 4: Approach to the EIA

Chapters 5 to 8: Scoped in Technical Chapters (Biodiversity, Cultural Heritage, Landscape and Visual, and Noise and Vibration).

Chapter 9: Cumulative Effects

Chapter 10: Summary of Effects

Volume III –Technical Appendices

Volume IV –Figures and Plans

The technical chapters of Environmental Statement Volume II (Chapters 5 to 8) would follow the following structure:

Introduction

Consultation and Scope

Methodology

Baseline conditions

Mitigation embedded into the design

Assessment of likely effects (without additional mitigation)

Additional mitigation measures

Assessment of residual effects (with additional mitigation)

Opportunities for Environmental Enhancement

Difficulties and Uncertainties, and

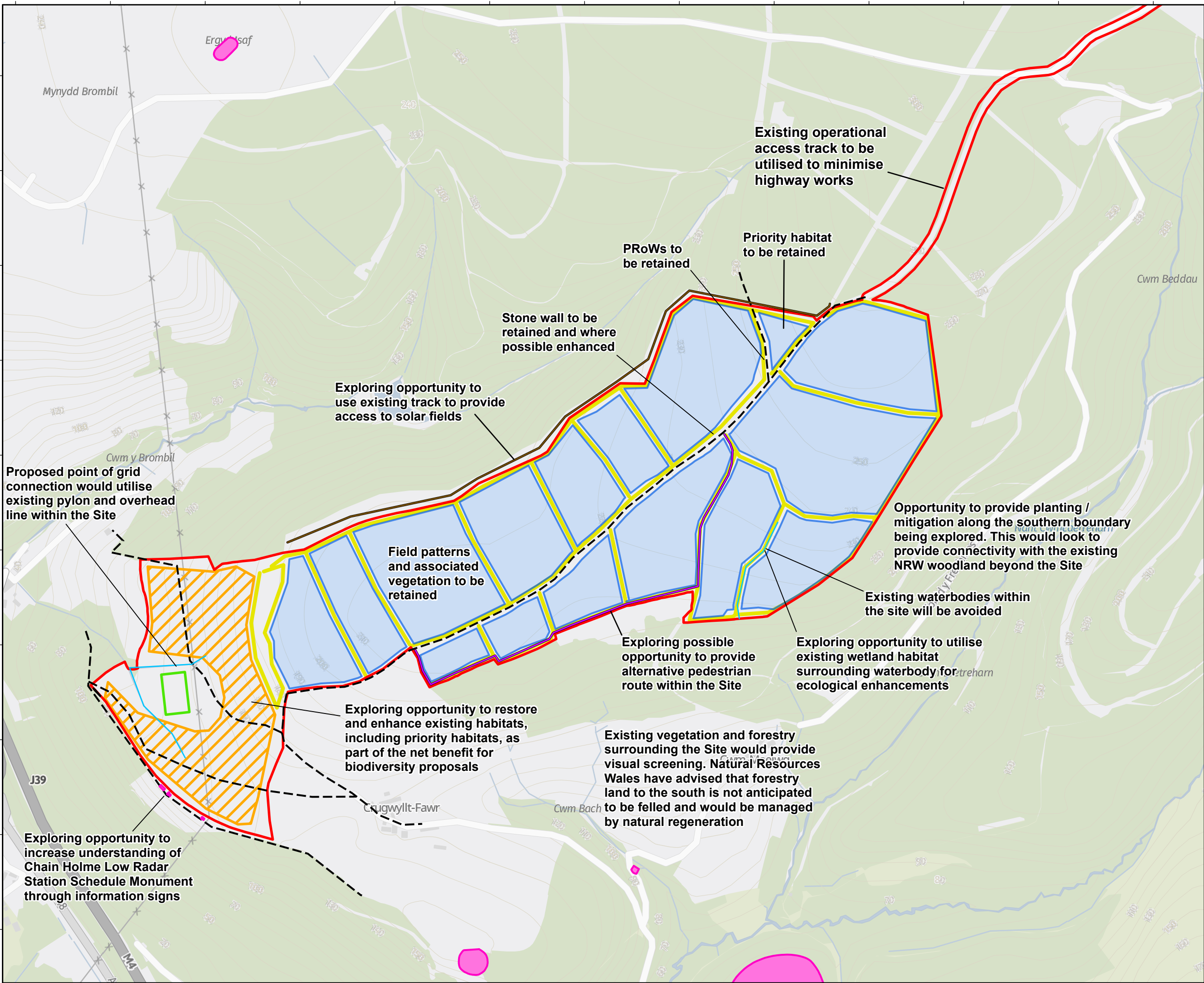
Inter-project Cumulative Effects.

APPENDIX G

OPPORTUNITIES PLAN

279000 279200 279400 279600 279800 280000 280200 280400 280600 280800 281000 281200 281400

188600
188400
188200
188000
187800
187600
187400
187200
187000
186800



Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	12/09/2025	Opportunities	FF	SP	SP

Port Talbot Solar Farm

RSK **Qualitas energy**

TITLE: Opportunities Plan

ID: P664640_Opportunities_A3L

0 100 200
Meters
Scale: 1:7,500 @ A3

REV 00

APPENDIX H

SIGNIFICANCE CRITERIA

Biodiversity

This assessment will be undertaken in accordance with best practice guidance for Ecological Impact Assessment, issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) as summarised below. The aims of the assessment are to:

- *Identify relevant ecological features (e.g. designated sites, habitats, species or ecosystems) which may be impacted;*
- *Identify any potentially significant effects upon them arising from the development (during the construction and operation stages);*
- *Establish the character / nature and significance of those identified effects;*
- *Identify mitigation measures to address the significant effects;*
- *Assess any residual effects and the need for any ecological compensation; and*
- *Assess the cumulative effects of this project in combination with other projects.*

The assessment of likely significant effects will take into account the construction and operation phases, noting that decommissioning will be similar to construction. The following sections define the approach that will be adopted within the assessment for the determination of 'importance', the likely impacts, the level of effect and significance.

Importance

The first stage of the assessment was to determine the 'importance' of the ecological features. The CIEEM Guidelines place the emphasis on identifying different aspects of ecological importance including designations, biodiversity value, potential value, secondary or supporting value, social value, economic value, legal protection and multi-functional features. These values have been applied to the ecological features within a defined geographical scale, from 'international' to 'local'. The criteria used to define the 'importance' of the ecological features on a geographic scale are provided in **Table H.1**.

Table H.1: Defining the importance of ecological features (summarised from CIEEM (2018))

Importance	Example criteria
International	An internationally designated site A sustainable area of a habitat listed in Annex I of the Habitats Directive Sustainable population of an internationally important species =
National	A nationally designated site A sustainable area of a priority habitat identified in Section 7 of Environment (Wales) Act Sustainable population of a nationally important species or site-supporting such a species (or supplying a critical element of their habitat requirement)
Regional	Sites/ populations which exceed the County-level designations but fall short of SSSI selection guidelines
County	Some designated sites (including Sites of Importance for Nature Conservation, County Wildlife Sites or Sites of Metropolitan Importance). A viable area of habitat identified in the County BAP. Sustainable populations of the following species: • Species listed in a County/Metropolitan 'red data book' or BAP on

Importance	Example criteria
	account of its rarity/localisation in a county context; or, Sites supporting 1% or more of a county population.
Local	Very low importance and rarity, local scale: - Areas of habitat considered to appreciably enrich the habitat resource within the ecological study area itself. - A small population of a species of conservation concern i.e., listed in the Local BAP.

Characterising ecological impacts

The next stage of an ecological impact assessment is to predict and characterise the likely change and impact on the ecological features identified. It is necessary to consider all of the following parameters:

- Whether the change is positive (beneficial) or negative (adverse);
- The magnitude or severity of the change;
- The extent of the area subject to a predicted impact;
- The duration the impact is expected to last prior to recovery or replacement of the resource or feature;
- The timing and frequency of the impact, i.e. conflicting with critical seasons or increasing impact through repetition; and
- Whether the impacts are reversible, with recovery through natural or spontaneous regeneration, or through the implementation of mitigation measures or irreversible, when no recovery is possible within a reasonable timescale or there is no intention to reverse the impact.

CIEEM (2018) stresses the importance of the precautionary principle in the assessment of significant effects. It states, 'If sufficient information is not available further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effects, mitigation/compensation measures should be applied in accordance with the precautionary principle. Where uncertainty exists, it must be acknowledged in the EclA.' Within this assessment, the level of confidence given to any professional judgements made has been presented using the following terms:

- Certain (95% probability or higher);
- Probable (50-94% probability);
- Unlikely (5-49% probability); or
- Extremely unlikely (less than 5% probability).

The characterisation of ecological impacts will take into consideration the primary (embedded) and tertiary mitigation identified, and secondary mitigation measures will be devised to address characterised impacts, where possible.

Significance of Effect

For each residual effect (i.e. following the identification of secondary mitigation), a clear statement will then be made as to whether the effect is Significant or Not Significant. The significance of effect on the 'important ecological features' will be determined based on the analysis of the factors that characterise the impact as well as professional judgement. A significant effect is defined as '*an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'*' (Chartered Institute of Ecology and Environmental Management, 2018).

Cumulative effects

The EIA process includes consideration as to whether any of the individual effects of the Proposed Development would combine to create a cumulative effect greater than the sum of the individual effects.

Cultural Heritage

Receptor importance

Analysis of historic assets and historic mapping will allow synthesis and interpretation of the historic development of the Site to be established in accordance with Cadw's Heritage Impact Assessment in Wales⁶ (section 4.2) and Conservation Principles⁷ for the sustainable management of the historic environment in Wales. This analysis will also establish what comprises the setting for the historic assets, and what elements of that setting contribute to how the asset is experienced, understood and appreciated.

Assessment of the heritage importance (sensitivity) of all assets that may be affected would use the criteria in the following table.

Table H.2: Criteria for Establishing Importance of Heritage Assets

Importance of the Asset	Criteria
Very high	World Heritage Sites; assets of acknowledged international importance; assets that can contribute significantly to acknowledged international research objectives; historic landscape of international value (designated or not) and extremely well-preserved historic landscapes with exceptional coherence, time depth or other critical factor(s).
High	Scheduled Monuments and non-designated assets of schedulable quality and importance; Grade I and II* Listed Buildings and Grade II Listed buildings that can be shown to have exceptional qualities in their fabric or associations; Protected Wreck Sites; Registered Battlefields; Grade I and II* Registered Historic Parks and Gardens. Conservation Areas containing very important buildings or with other exceptional qualities; non-designated structures of clear national importance; designated and non-designated historic landscapes of historic interest; assets that can contribute significantly to acknowledged national research objectives.
Medium	Grade II Listed Buildings, Grade II Registered Historic Parks and Gardens, non-designated assets that contribute to regional research objectives; Locally listed buildings (historic unlisted buildings) that have exceptional qualities; Conservation Areas.
Low	Non-designated historic assets of local importance including those compromised by poor preservation; assets of limited value but with the potential to contribute to local research objectives; locally listed buildings; robust non-designated historic landscapes.
Negligible	Assets with very little surviving archaeological interest; buildings of little architectural or historic note; landscapes with little significant historic interest. Negligible or no heritage significance.
Unknown	Further information is required to assess the potential of these sites

⁶ <https://cadw.gov.wales/sites/default/files/2019-05/20170531Heritage%20Impact%20Assessment%20in%20Wales%2026917%20EN.pdf>

⁷ <https://cadw.gov.wales/advice-support/historic-assets/conservation-principles>

Magnitude of Impact

The impact will reflect the scale of change which would be caused by the Proposed Development and the effect this would have on ability to interpret significance and appreciate the historic asset. Impacts can result either from physical changes to a historic asset or through sensory changes within its setting.

Impacts may impart major change, for example where groundworks completely destroy important archaeological remains, to minor change to part of a historic asset's setting, leading to a limited impact on our ability to interpret it, or its context.

Utilising the key principles for assessing the implications of change outlined above, an assessment of the magnitude of impact will be implemented for each baseline historic heritage asset using the criteria presented in **Table H.3**.

Conclusions of the assessed magnitude of impacts are a product of the consideration of the elements of an asset and its setting that contribute to its heritage significance and the degree to which the proposed development would change these contributing elements. The assessment therefore reflects the varying degrees of sensitivity of different assets to change brought about by different types of development. Utilising the key principles for assessing the implications of change outlined above, an assessment of the magnitude of impact will be implemented for each baseline historic asset using the criteria in the following table.

This definition of magnitude and assessment methodology applies to likely effects resulting from change in the setting as well as likely physical effects on the fabric of an asset.

Table H.3: Criteria for Classifying Magnitude of Impact

Magnitude	Summary
High beneficial	Elements of the asset's physical fabric which would otherwise be lost, severely compromising its heritage significance, are preserved in situ; or Elements of the asset's setting, which were previously lost or unintelligible, are restored, greatly enhancing its heritage significance.
Medium beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to an appreciable but partial loss of heritage significance, are preserved in situ; or Elements of the asset's setting are considerably improved, appreciably enhancing its heritage significance; or Research and recording leads to a considerable enhancement to the archaeological or historical interest of the asset.
Low beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to a slight loss of heritage significance, are preserved in situ; or Elements of the asset's setting are improved, slightly enhancing its heritage significance; or Research and recording leads to a slight enhancement to the archaeological or historical interest of the asset.
None / Negligible	The asset's fabric and/or setting is changed in ways which do not materially affect its heritage significance.
Low Adverse	Elements of the asset's fabric and/or setting which are of very limited relevance to its significance are lost or changed, resulting in a very slight loss of heritage significance; or Elements of the asset's fabric and/or setting which contribute to its significance are affected, but to a limited extent, resulting in an

Magnitude	Summary
	appreciable but partial loss of the asset's heritage significance.
Medium adverse	Elements of the asset's fabric and/or setting which contribute to its significance are affected, but to a limited extent, resulting in an appreciable but partial loss of the asset's heritage significance.
High adverse	Key elements of the asset's fabric and/or setting are lost or fundamentally altered, such that the asset's heritage significance is lost or severely compromised.

Significance of Effect

The assessment of effects will combine analysis of the data gathered during the desk-based assessment and site visit, photographs and any wireline visualisations of the topography and Proposed Development.

These assessments will be carried out using professional judgement, taking into account designations and heritage significance as assessed against national standards. Significance of effect will be based on a combination of importance (in other disciplines sometimes referred to as sensitivity of the receptor) and magnitude of impact (incorporating contribution from setting where relevant) to establish the likely significance of effect. The significance of effect matrix is presented in **Table H.4** and provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly where the importance or impact magnitude levels are not clear or are borderline between categories. EIA significance may be described on a continuous scale from negligible to major.

It is also common practice to identify effects as significant or not significant, and in this sense major and moderate effects are regarded as significant, while minor and negligible effects are not significant. Where **Table H.4** provides two possible options for the significance of effect this will be a matter of professional judgement, taking into account the relative importance and heritage significance of the asset, the magnitude of impact and the reversibility or otherwise.

Table H.4: Criteria for Assessing the Significance of Effect

Magnitude of effect	Heritage Importance					
	Very high	High	Medium	Low	Negligible	
High beneficial	Major	Major	Major or moderate	Moderate or minor	Minor or negligible	Enhancement
Medium beneficial	Major	Major or moderate	Moderate or minor	Minor	Minor or negligible	
Low beneficial	Major or moderate	Moderate or minor	Minor	Negligible	Negligible	
Neutral/ None	Negligible	Negligible	Negligible	Negligible	Negligible	Neutral/ Nil
Low adverse	Major or moderate	Moderate or minor	Minor	Negligible	Negligible	Harm
Medium adverse	Major	Major or moderate	Moderate or minor	Minor	Minor or negligible	
High adverse	Major	Major	Major or moderate	Moderate or minor	Minor or negligible	

Landscape and Visual

The Guidelines for Landscape and Visual Impact Assessment (Third Edition) (GLVIA3) are widely recognised as the primary source of guidance for Landscape and Visual Impact Assessment (LVIA) in the UK but clearly state that:

“The guidance concentrates on principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not provide a detailed ‘recipe’ that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances.” (paragraph 1.20)

GLVIA 3 also states that: *“professional judgement is a very important part of the LVIA”* (paragraph 2.23) and that *“in all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others.”* (paragraph 2.24).

It goes on to state that *“there are no hard and fast rules about what effects should be deemed significant but LVIA should always distinguish clearly between what are considered to be the significant and non-significant effects.”* (paragraph 3.32)

Landscape and visual assessments are separate, though linked processes which GLVIA3 notes are *“related but very different considerations”*. The assessment of the potential effect on the landscape is carried out as an effect on the environmental resource (i.e., the landscape). Visual effects are assessed as an inter-related effect on people.

In accordance with GLVIA3, the significance of landscape effects is determined by combining judgements regarding the sensitivity of the receiving landscape and the magnitude of the landscape effects arising from the Proposed Development.

In accordance with GLVIA3, the significance of visual effects is determined by combining judgements regarding the sensitivity of visual receptors (people who view the landscape) and the magnitude of the change they experience arising from the Proposed Development.

Landscape sensitivity

As stated in GLVIA3, “LVIA sensitivity is similar to the concept of landscape sensitivity used in the wider arena of landscape planning, but is not the same.” In LVIA, landscape sensitivity is assessed by combining judgements about the value attached to a landscape and its susceptibility to the type of change and nature of the development proposed. The overall sensitivity of the landscape to a particular development is described as High, Medium or Low.

- **Landscape value** varies in relation to the different stakeholders and different parts of society that use or experience a landscape. It reflects the importance attached to a landscape. Sometimes it is used as a basis for designation or recognition which expresses national or local authority consensus, because of its special qualities/attributes. Although factors such as formal designations are an important component when determining landscape value, other aspects are also considered as part of the judgement process, as explained in Landscape Institute Technical Guidance Note 02-21: Assessing Landscape Value Outside National Designations. These include issues related to natural and cultural heritage (for example ecological, geological or heritage matters), landscape condition, associations (in terms of connections with people, arts or events), distinctiveness (i.e., a sense of unique identity in the landscape), recreational opportunities, perceptual aspects (including scenic quality, wildness and tranquility) and

landscapes with a clearly identifiable role or function. In the LVIA, the value attributed to the landscape will be described as: National, Regional, or Community.

- **Landscape susceptibility** according to GLVIA3 means “the ability of the landscape receptor to accommodate the Proposed Development without undue consequences for maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies” (paragraph 5.40). The susceptibility of the landscape varies depending on the type of development proposed and the particular site location. Judgements on landscape susceptibility include references to both the physical and aesthetic characteristics and the potential scope for mitigation. In the LVIA, the susceptibility of the landscape will be described as: High, Medium or Low.

The criteria and the detailed judgements regarding susceptibility and value of landscape receptors will be set out in the LVIA.

Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor as illustrated by **Table H.5** below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted.

Table H.5: Landscape sensitivity criteria

Value	Susceptibility		
	High	Medium	Low
National	High	High/medium	Medium
Regional	High/Medium	Medium	Medium/Low
Community	Medium	Medium/Low	Low

Magnitude of landscape change

The magnitude of change arising from the Proposed Development at any particular location is assessed in terms of its “*size or scale, geographic extent of the area or receptor that is influenced and its duration and reversibility.*” (paragraph 5.48).

Judgements concerning the scale of the change take account of:

- Degree of loss or alteration to key landscape features/elements; characteristics; and for designated areas – special qualities and/or purposes of designation;
- Distance from the Proposed Development; and
- Landscape context to the Proposed Development.

The approach to assessing effects on landscape character is to consider the key characteristics for the Landscape Character Area (LCA) within which the Proposed Development is located (the host LCA) and if relevant the adjacent LCAs (non-host) and identify which of these the Proposed Development would affect. A large-scale change in landscape character is likely to occur where key characteristics would be lost or substantially changed. A small-scale change is likely to occur where key characteristics are altered to a lesser degree and this can be influenced by distance and surrounding context.

Where particular views are a key characteristic of a LCA, large or medium scale landscape character effects may occur where the Proposed Development becomes a key feature of those views. A similar approach applies to designated landscapes, for which the effects on the defined purposes of designation and special qualities are considered.

The scale of landscape change is described as: Large, Medium, Small or Negligible.

Having established the scale of change to the landscape baseline, the geographic extent of the change can be identified and is described as: Wide, Intermediate, Localised or Limited.

Duration and reversibility can be linked depending on the nature of the development.

Reversibility is a judgement about the practicality of reversing the landscape effects of the

proposed development (for example, solar farms are ultimately largely reversible whilst housing is permanent). Duration reflects how long the change will last. In the LVIA, the duration of the change will be considered:

- Short term when lasting less than 2 years;
- Medium term when lasting between 2 and 10 years;
- Long term when lasting between 10 and 40 years; and
- Permanent for more than 40 years.

Magnitude is considered taking into account the three contributory factors, as illustrated by the diagrams presented in **Figure H1** below.

Visual sensitivity

In LVIA, visual receptor sensitivity is assessed by combining judgements about the value attached to views and the susceptibility of the viewer to the type of change and nature of the development proposed. The overall sensitivity of the visual receptor to a particular development is described as: High, Medium or Low.

The value of public views, which is the focus of GLVIA3, will vary depending on the nature, location and context of the view and the recognised importance of the view. Considerations include cultural associations; designation or policy protection; views of or from landmarks; and/or the scenic quality of the view. It should be noted that the value attributed relates to the value of the view only (e.g., a National Trail is nationally valued for access, but not always for the available views from every section). In the LVIA, the value attributed to visual amenity will be described as: National, Regional, or Community.

- Susceptibility of visual receptors: Those living within view of the Proposed Development are usually regarded as the highest susceptibility group as well as those engaged in outdoor pursuits for whom landscape experience is the primary objective. The susceptibility of potential visual receptors will also vary depending on the activity of the receptor. For visual receptors, susceptibility and value are closely linked - the most valued views are also likely to be those where viewer's expectations will be highest. In the LVIA, visual receptor susceptibility will be defined in accordance with the criteria below:
 iHigh - Local residents; users of outdoor recreation focussed on the appreciation of views including footpaths, beauty spots and picnic areas and people experiencing views to or from important features of physical, visual, cultural or historic interest.
- Medium - Local road users and travellers on trains. People engaged in outdoor recreation with some appreciation of the landscape e.g., road cycling, nature conservation, golf and water based recreation.
- Low - Workers, users of facilities and commercial buildings (indoors) experiencing views from buildings. Road and rail users on fast moving commuting or trunk routes. Visual receptors where views are incidental to the activity and/or location.

Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor, as illustrated by **Table H.6** below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted.

Table H.6: Visual sensitivity criteria

Value	Susceptibility		
	High	Medium	Low
National	High	High/medium	Medium
Regional	High/Medium	Medium	Medium/Low
Community	Medium	Medium/Low	Low

Magnitude of visual change

The magnitude of visual change arising from the Proposed Development is assessed in terms of its size or scale, geographic extent of the area or receptor that is influenced and its duration.

The scale of change arising from the Proposed Development as experienced by a visual receptor group reflects the degree to which the nature of the views from that location would be changed taking into account:

- The distance from the Proposed Development;
- The degree to which the Proposed Development is visible or screened;
- The angle of view in relation to main receptor activity or main focus of the view;
- The horizontal and vertical field of view occupied by the Proposed Development; and
- The extent and nature of other built development visible.

The scale of change in view is described as: Large, Medium Small or Negligible.

The approach to assessing effects on views is to consider the full 360-degree view from any given receptor – not just those towards the development and/or shown in visualisations. It is assumed that the change would be seen in clear visibility and the assessment is carried out on that basis. Seasonal variations in visibility due to varying vegetation cover is also taken into account in all judgements.

For visual receptors moving through the landscape (e.g., along footpaths, roads), the length of their journey during which they would see the Proposed Development is reflected in the judgement of the geographic extent of effects. In the LVIA, the geographical extent of visual change will be described as: Wide, Intermediate, Localised or Limited.

Duration reflects how long the change will last and judgements are framed in the same way as described above for landscape effects. In the LVIA, the duration of the change will be considered:

- Short term when lasting less than 2 years;
- Medium term when lasting between 2 and 10 years;
- Long term when lasting between 10 and 40 years; and
- Permanent for more than 40 years.

Magnitude is considered taking into account the three contributory factors, as illustrated by the diagrams presented in **Figure H1** below.

Combining scale of change, extent and duration to determine magnitude of landscape and visual effects

Scale of change is the first and primary factor in determining magnitude. Geographical extent and duration of the effect are modifying factors to the overall magnitude judgement which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale.

The diagrams presented below in **Figure H1** illustrate in outline how these judgements are considered as a two-stage process. They are not intended to be interpreted rigidly as a chart to provide definitive answers; professional judgement is employed as appropriate to arrive at an overall magnitude judgement.

Firstly, scale and extent are considered, for which the outcomes are illustrated by the first part of the diagram; the second part of the diagram illustrates the influence of duration on this initial judgement.

In the LVIA, the magnitude of effects will be described as: Substantial, Moderate, Slight or Negligible. Where magnitude is judged to lie between levels, based upon professional judgement, an intermediate assessment will be adopted, such as Moderate to Slight.

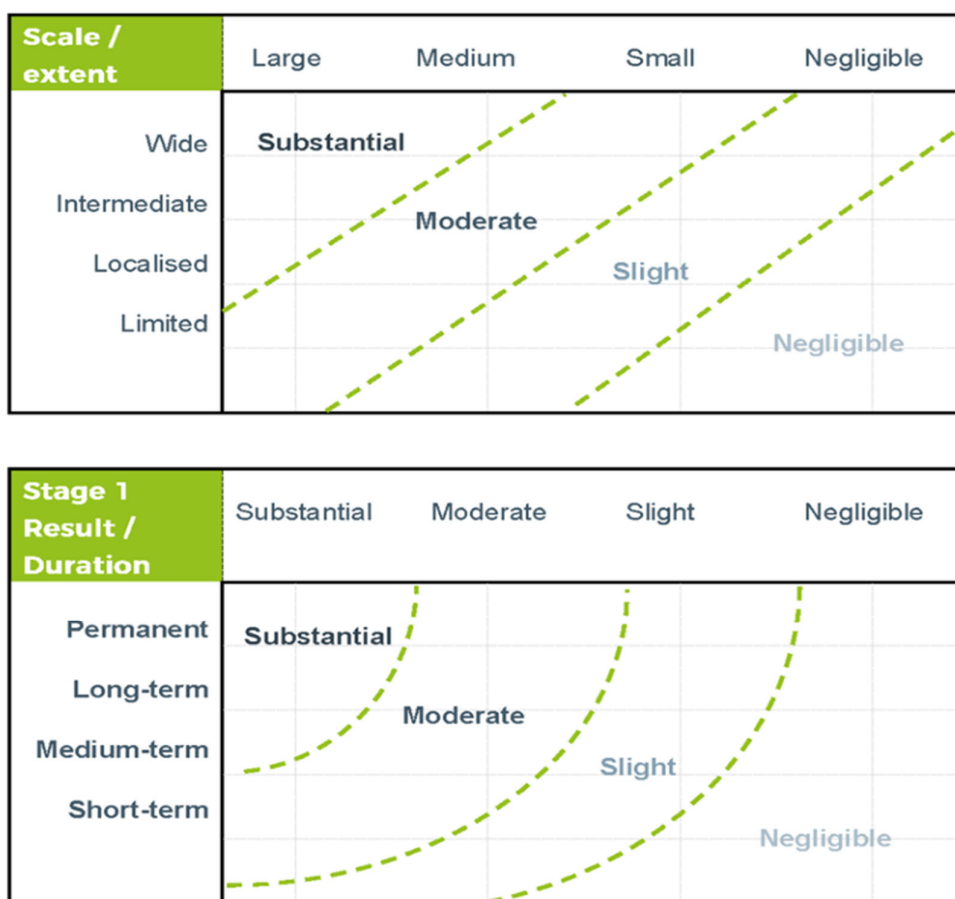


Figure H1 Scale of effect diagrams

Significance of landscape and visual effects

The significance of any identified landscape or visual effect will be assessed as Major, Moderate, Minor or Negligible. These categories are based on the consideration of sensitivity with the predicted magnitude of change. **Table H.7** below is not used as a prescriptive tool and illustrates the typical outcomes, allowing for the exercise of professional judgement. In some instances, a particular parameter may be considered as having a determining effect on the analysis.

Table H.7: Significance of effect criteria

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

Where the effect has been classified as Major or Major/Moderate, this is considered to be equivalent to a likely significant effect. Where 'Moderate' effects are predicted, professional judgement will be applied to determine whether the effect is significant or not ensuring that the potential for significant effects to arise has been thoroughly considered.

Landscape and visual effects can be beneficial or adverse and, in some instances, may be considered neutral. Neutral effects are those which overall are neither adverse nor positive but may incorporate a combination of both. Whether an effect is beneficial, neutral or adverse is identified based on professional judgement. GLVIA3 indicates at paragraph 2.15 that this is a "*particularly challenging*" aspect of assessment, especially in the context of a changing landscape.

However, for the avoidance of doubt, in the LVIA it will be assumed that where new infrastructure is introduced into the landscape or views, this will generally constitute an adverse effect. Any variation from this stance will be clearly justified in the LVIA.

Noise and Vibration

Only receptors considered to be highly sensitive are proposed to be included in the assessment. Consequently, the level of impact (magnitude) is the key consideration in determining the scale of effect.

Table H.8 sets out the scale of effect criteria proposed for the assessment based on BS 4142:2014.

Table H.8: Scale of Effect

Negligible	Minor	Moderate	Major
> 10 dB below $L_{A90, T}$	Between 10 dB below and 5 dB above $L_{A90, T}$	Between 5 dB and 10 dB above $L_{A90, T}$	> 10 dB above $L_{A90, T}$

Effects from noise and vibration will be deemed to be either significant, or not significant. Owing to the significance criteria as stipulated in BS 4142:2014, an exceedance (rating level relative to the background sound level) of 5 dB or more has the *potential* to be significant, depending on the context. Whether or not the effect is considered significant will be determined based on professional judgement, with the reasoning provided in the ES.

APPENDIX I

GLINT AND GLARE RECEPTOR SCOPING

ASSESSMENT

Glint and Glare Receptor Scoping Assessment

Q-Energy Sustainable Investments Ltd

Port Talbot Solar

September 2025

PLANNING SOLUTIONS FOR:

- Solar
- Defence
- Airports
- Telecoms
- Buildings
- Radar
- Railways
- Wind
- Mitigation

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ADMINISTRATION PAGE

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1 INTRODUCTION

1.1 Overview

This receptor scoping report presents all the identified receptors such as aerodromes, dwellings, and roads, which will be taken forward for the full technical glint and glare assessment, for the proposed 'Port Talbot Solar' development. A report has therefore been produced that contains the following:

- Presentation of indicative Solar Photovoltaic (PV) module areas;
- Explanation of glint and glare;
- Overview of relevant guidance;
- Overview of relevant studies;
- Identification of receptors:
 - Unlicensed aerodromes (Old Park Farm Airfield);
 - Road receptors;
 - Dwelling receptors.

1.2 Pager Power's Experience

Pager Power has undertaken over 1,700 Glint and Glare assessments internationally. The studies have included assessment of civil and military aerodromes, railway infrastructure and other ground-based receptors including roads and dwellings.

1.3 Glint and Glare Definition

The definition of glint and glare is as follows:

- Glint – a momentary flash of bright light typically received by moving receptors or from moving reflectors;
- Glare – a continuous source of bright light typically received by static receptors or from large reflective surfaces.

These definitions are aligned with those presented within the National Policy Statement for Renewable Energy Infrastructure (EN-3)¹ and the Federal Aviation Administration in the USA. The term 'solar reflection' is used in this report to refer to both reflection types.

¹ Published by the Department for Energy Security and Net Zero in November 2023 and came into force in January 2024

2 PROPOSED DEVELOPMENT LOCATION AND DETAILS

2.1 Site Area Layout Plan

An indicative layout plan has been provided by the applicant. This layout plan illustrates where solar PV modules may be located within the site. This plan has been extrapolated and overlaid onto aerial imagery in Figure 1 on the following page.



Figure 1 Solar Panel Areas – aerial image

3 IDENTIFICATION OF AVIATION RECEPTORS

3.1 Overview

Glint and glare analysis is often undertaken for solar developments that are adjacent to large aerodromes. The most common concerns are:

1. Potential reflections towards an Air Traffic Control (ATC) tower;
2. Potential reflections towards approaching pilots of powered aircraft for the final two miles of the approach.

With regard to Point 2, these reflections are typically evaluated in the context of:

- Whether they are in a pilot's primary horizontal field of view (50° either side of the direction of travel);
- The intensity of the solar reflection.

There is no formal assessment distance within which aviation effects must be modelled. However, in practice, concerns are most often raised for developments within 10km of a licensed airport. Requests for modelling at ranges of 10-20 km are far less common. Assessment of aviation effects for developments over 20 km away is a very unusual requirement.

Old Park Farm Airfield is an unlicensed General Aviation (GA) airfield located within 3km of the Proposed Development. This has been identified for assessment with technical modelling. Two operational runways have been identified, the details² of which are presented below:

- 12/30 measuring approximately 300 by 15 m (grass);
- 06/24 measuring approximately 340 by 25 m (grass).

No ATC Towers have been identified.

3.2 Aviation Receptors – Runway Approach Paths and Visual Circuits

The airfield identified for assessment is a GA airfield where aviation activity is dynamic and does not necessarily follow the typical approaches / flight paths of a larger licensed aerodrome or airport. It is not possible to assess every single location of airspace that an aircraft travels in flight around an aerodrome; however, it is possible to assess the most frequently flown flight paths and the most critical stages of flight, which would cover most, or all, of the relevant locations.

For GA airfields, Pager Power's methodology is to assess whether a solar reflection can be experienced on the 1-mile approach path with a splay angle of 5 degrees, considering 2.5 degrees either side of the extended runway centreline.

² Source: Approximated from aerial imagery

The assessment will consider whether a solar reflection can be experienced on the final sections of the visual circuits/joins using the following characteristics:

- A descent angle of 5 degrees;
- Circuit width of 1 nautical mile from runway centreline;
- Maximum altitude of 500 feet above the average threshold altitude.

Figure 2 on the following page illustrates a typical 1-mile splayed approach and final sections of visual circuits/joins.

Figure 3 on page 12 gives a breakdown of all aircraft receptor points that will be assessed for the airfield. The runway threshold details used can be found in Appendix E.

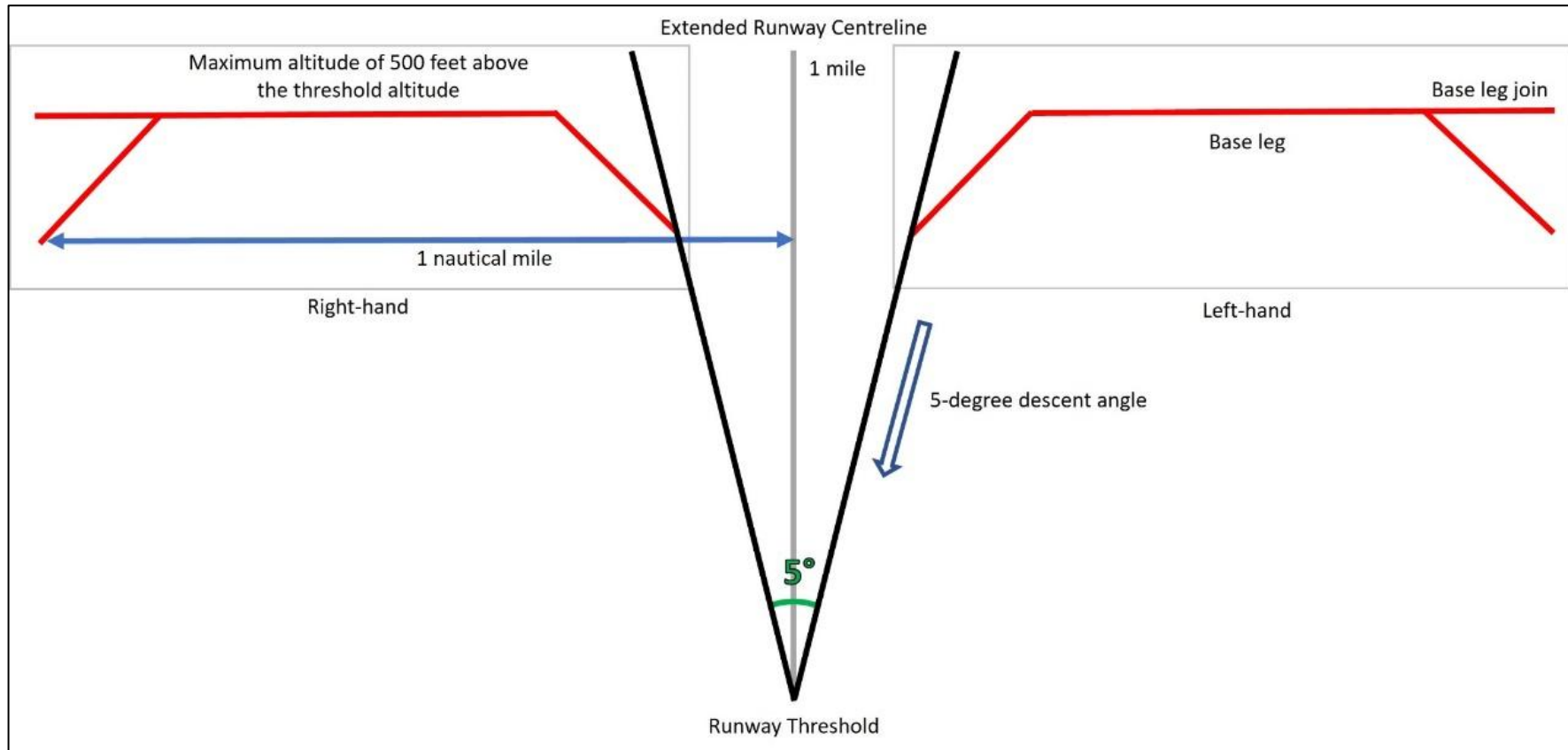


Figure 2 Typical splayed approach and final sections of visual circuits