Design & Access Statement

Glyn Taff Solar Farm

03/03/2025

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Neo Environmental Ltd	
Head Office - Glasgow: Wright Business Centre, 1 Lonmay Road, Glasgow G33 4EL T 0141 773 6262 E: info@neo-environmental.co.uk	**Bristol Office** Spaces 8th Floor The Programme Building Bristol BS1 2NB T: 01174 571 610 E: info@neo-environmental.ie
Warrington Office: Lakeview 600, Lakeside Drive Centre Park Square Warrington WA1 1RW T: 01925 661 716 E: info@neo-environmental.co.uk	**Rugby Office:** Valiant Suites, Lumonics House, Valley Drive, Swift Valley, Rugby Warwickshire CV21 1TQ T: 01788 297012 E: info@neo-environmental.co.uk
Ireland Office: C/O Origin Enterprises PLC, 4-6 Riverwalk, Citywest Business Campus Dublin 24, D24 DCW0 T: 00 353 (1) 5634900 E: info@neo-environmental.ie	**Northern Ireland Office:** 83-85 Bridge Street Ballymena, Co. Antrim BT43 5EN T: 0282 565 04 13 E: info@neo-environmental.co.uk

Prepared For:

Renantis UK Limited

Prepared By:

Conor Cochrane BSc (Hons), MSc MRTPI MIPI

	Name	Date
Edited By:	Conor Cochrane	28/02/2025
Checked By:	Russell Buckley	03/03/2025
	Name	**Signature**
Approved By	Russell Buckley	

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1. INTRODUCTION

1.1. This Design & Access Statement ("DAS") has been prepared by Neo Environmental Ltd, on behalf of Renantis UK Limited ("the Applicant") to accompany a Planning Application submitted to Planning and Environmental Decisions Wales (PEDW) for a proposed solar farm (the "Proposed Development") on lands at Bryntail Farm, Bryn Tail Lane, Pontypridd (the "Site").

1.2. Planning permission is sought for a ~~temporary~~ period of 35 years, after which, the Proposed Development will be decommissioned, all infrastructure removed, and the Site restored to its former agricultural use or alternatively a 15 year extension applied for.

1.3. Centred at National Grid Reference E: 309333, N: 189800, the Site is comprised of 38 agricultural fields that are currently in use for livestock farming which extend to circa (c.) 70.9 ha approximately 0.60km east of the A470.

1.4. The Site is located within the jurisdiction of Rhondda Cynon Taf County Borough Council and is identified to fall within the open countryside for development management purposes.

1.5. Renantis UK Limited, recently rebranded as Nadara following the combination with Ventient Energy, brings together 30 years of combined industry experience to become one of Europe's largest renewable energy providers. Nadara has an operational 4GW portfolio of around 200 onshore wind, solar, biomass, and energy storage plants, including nine wind farms with an installed capacity of 163MW in Wales. The company operates in Europe – notably in the UK, Italy, France, Spain and Portugal – and the US, and has more than 1,000 employees. The company's name was inspired by the Scottish Gaelic word 'Nàdarra', which means 'natural' – it embodies the natural energy harnessed in the renewable energy plants that Nadara develop, own and operate.

Scope of Design & Access Statement and Associated Documents

1.6. This Design and Access Statement (DAS) has been prepared a statutory requirement for certain types of development, including large-scale renewable energy projects such as solar farms.

1.7. As set out in the Governed the Town and Country Planning (Development Management Procedure) (Wales) Order 2012, the DAS serves as a structured document that demonstrates how the proposed development has been carefully designed to respond to its environmental, landscape, and social context while ensuring accessibility considerations are appropriately addressed.

1.8. Specifically, in the case of a solar farm, the DAS outlines the rationale behind the site selection, the scale and layout of the development, visual and landscape integration, and the mitigation measures proposed to minimise environmental and amenity impacts. Additionally, the

document explains how the scheme aligns with Planning Policy Wales (PPW) and relevant local development plan policies, ensuring that the development is both sustainable and accessible. By providing a clear and reasoned justification for the design approach, the DAS facilitates informed decision-making by the local planning authority and stakeholders, demonstrating that the proposal contributes positively to the local area while addressing key environmental and accessibility considerations.

Regulatory Considerations

1.9. The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 require the submission of an Environmental Statement (ES) with applications for planning permission for "EIA development".

1.10. The 2017 Regulations differentiate two types of EIA development - Schedule 1 and Schedule 2. Schedule 1 development (and changes/extensions thereto) is EIA development and therefore requires an EIA. Schedule 2 development (and changes/extensions thereto) is only EIA development if - in the opinion of the LPA - it is likely to have significant effects on the environment by virtue of factors such as size, nature or location.

1.11. Under category 3 (a) of Schedule 2, development of industrial installations for the production of electricity exceeding a development threshold of 0.5 ha is classified as Schedule 2 development. As the Development exceeds the Schedule 2 area threshold of 0.5 hectares, whether the Development is EIA development or not depends on an assessment against the screening selection criteria, as set out in Schedule 3 of the EIA Regulations, which comprise:

- Characteristics of the development;
- Location of the development; and
- Characteristics of the potential impact.

1.12. The Governments Planning Practice Guidance (PPG) paragraph 018, states that EIA will only apply to a small proportion of projects and only those which are likely to have significant effects. The key question is whether or not the project would be likely to give rise to significant effects on the receiving environment, taking into account the selection criteria in Schedule 3.

1.13. Notwithstanding the above, the Applicant formally submitted an Environmental Impact Assessment Screening Opinion Request to Planning and Environmental Decision Wales on 4th January 2024 which was registered by PEDW under application reference CAS-03147-D7S9P8. A formal EIA Screening Opinion decision letter was issued by Planning and Environmental Decision Wales on 13th February 2024, confirming that it is the opinion of the PEDW that there is a requirement for this development proposal to be subject of a formal Environmental Impact Assessment.

Pre-application Consultation

1.14. A formal request for pre-application advice was made by Neo Environmental Ltd on behalf of Renantis UK Limited in July 2024. The pre-application enquiry was registered by Rhondda Cynon Taf Council and assigned the reference number 24/5063/PRE.

1.15. A formal pre-application response was provided by the Council on the 9th of September 2024.

1.16. The pre-application response outlines the site context and refers to constraints in relation to this including:

- The potential of the Proposed Development to impact Public Rights of Way;
- Highways near the Site that could facilitate access to the Site;
- Need to take regard of the Twyn Hywell Wind Farm;
- Potential for contaminated land in and around the Site;
- Potential for flooding in and around the Site; and
- On-site designations.

1.17. The pre-application response goes on to summarise the national and local policy documents relevant to the Proposed Development and the specific policies within some of these documents that apply to the Proposed Development. It advises that the Proposed Development should have regard to the requirements of these policies when formulating any planning application.

1.18. The pre-application response also identified the various requirements any forthcoming application would have to meet such as the inclusion of an Environmental Statement. It also identified the various technical and environmental considerations any forthcoming planning submission would need to address, including landscape, ecology, transportation, public rights of way, flood risk, contamination and the historic environment.

2. SITE AND SURROUNDING CONTEXT

2.1. The Site is comprised of 38 agricultural fields currently use for livestock farming. It is situated c. 300m north of Rhydyfelin, c. 310m northeast of Glyntaff, c. 800m east of Pontypridd town cente, c. 850m southeast of Coedpenmaen, c. 1.60km southwest of Senghenydd and c. 1.60km northwest of Abertridwr.

2.2. The Site is wholly located within the jurisdiction of Rhondda Cynon Taf County Borough Council which was established as a unitary authority in 1996. Previously, the Site was under the administration of 'Taf-Ely Borough Council' until it was merged with 'Cynon Valley Borough Council' and 'Rhondda Borough Council' in 1996.

2.3. The Site is within the open countryside for development management purposes.

2.4. The Site is located within close proximity to the local A and B road network with a number of regional roads in close proximity to the Site including the A470 (c. 550m west), the B4595 (c. 750m southwest) and the A4058 (c. 900m west).

2.5. The land within the Sites lies at an elevation of approximately 130 – 330m AOD and covers a total area of c. 70.9 hectares. It is centred around Bryntail Farm at approximate National Grid Reference (NGR) E 309333, N 189800.

Planning History

2.6. This Section of the Design & Access Statement provides a summary of the relevant planning history both within the Site and the immediate surrounding area.

2.7. From a review of Rhondda Cynon Taf's online planning register, the only relevant planning history to the site is Twyn Hywel Energy Park a consented wind farm including 14 turbines (DNS/3272053) which sits on land adjacent to the site.

2.8. The following table shows the relevant planning history associated with the Site and the surrounding area:

Table 1: Planning History and relevant developments.

Planning Reference	Description	Proximity	Planning Status
Caerphilly County Borough Council			
DNS/3272053 23/0427/DNS/	Construct and operate up to 14 wind turbines and associated	0.010km E	Granted

22/1272/DNS	infrastructure- Development of National Significance		
23/0508/FULL	Erect residential development of 169 residential units and associated works	4.532km NE	Granted
22/0072/FULL	Erect residential development of 153 No. units with new access, landscaping, drainage arrangements and associated works	1.870km E	Granted
23/0470/FULL	Erect a synchronous condenser with ancillary infrastructure and associated works including access and landscaping, and a cable connection to the adjacent existing substation for the purpose of supplying grid stability to the National Grid as part of their pathfinder 3 initiative	3.410km NE	Granted
23/0116/DNS	Construct and operate a Solar Photovoltaic (PV) Farm - Development of National Significance	2.754km E	Granted
21/0855/FULL	Install anemometer mast of up to 81.3 m high (including instruments) for 3 years, with associated security fencing	3.940km NE	Granted
16/0385/FULL	Erect a single wind turbine of up to 77m tip height and associated infrastructure	1.733km NE	Granted
<u>Rhondda Cynon Taf County Borough Council</u>			
24/1017/SSO	Scoping report for 8 turbines	5.5km N	n/a
23/0958/FUL	Proposed residential development of 20 no. dwellings,	3.5km N	n/a – pending decision
DNS 3280378	To construct and operate a wind farm consisting of up to 7 wind turbines and associated	4.600km W	Granted

22/1129/DNS	infrastructure (Development of National Significance)		
15/1635/FUL	Erection of two wind turbines with a tip maximum height of 125m, associated infrastructure, transformer cabin and access track, including access via the public highway and across Cribin Ddu Farm and Llwyncelyn Farm	4.463km NW	Granted
20/0934/SSO	Screening Opinion for proposed to develop the site for a new, residential community comprising up to 110 dwellings in a mix of housing types and tenures.	4.36km NW	Resolved
08/1380/FUL	Application for determination of conditions for mineral site. The Environmental Act 1995 (Section 96 and paragraph 9 of schedule 13).	1.71km NW	Granted
21/1517/GREG	New Welsh medium primary school, MUGA, sports field, car park, landscaping, and associated infrastructure works.	0.855km S	Granted
22/0425/GREG	Provision of a new 3-16 'all through' school, demolition of some buildings and replacement, refurbishment of others, new staff car park, coach car park and pupil drop off, associated works.	1.530km S	Granted
22/1128/DNS	Solar park, access and associated development (Development of National Significance)	2.705km S	Raise No Objection
18/1402/OUT	Outline application for residential development (All matters reserved save for access) with associated public open space, landscaping and other associated works	3.860km SW	Granted

15/0777/FUL	Solar photovoltaic park, ancillary development and ecological enhancements	2.8km SW	Granted
14/1014/FUL	Installation of a solar farm and associated infrastructure, including photovoltaic panels, mounting frames, inverters, transformers, substations,	4.44km S	Granted

2.9. As evidenced above, there are a number of historic planning applications which have been submitted within the local area for the development of solar farms and other renewable energy infrastructure.

3. THE PROPOSED DEVELOPMENT

3.1. The Proposed Development will consist of the Installation, operation and subsequent decommissioning of a renewable energy scheme comprising ground mounted photovoltaic solar arrays together with substation compound, transformer stations, internal access track, landscaping, biodiversity measures, boundary fencing, security measures, CCTV posts, monitoring house, storage containers access improvement and ancillary infrastructure. The solar arrays will have a combined capacity of up to 39.9MWp.

3.2. The Proposed Development will occupy 38 agricultural fields that are currently in use for livestock farming. Please see **Figure 3 of Volume 4: Planning Application Drawings** for a visual representation of the fields that make up the Site.

3.3. The Site will be accessed via two existing access points off Bryn Tail Lane. A new internal access track (see **Figure 6 of Volume 4: Figures Pack** for access track detail) will be constructed within the Site. A sufficient turning space for vehicles entering and leaving the site has been provided.

3.4. The Proposed Development will be laid out across 38 fields, comprising 1,333 module racks of solar panels facing southwards with up to a 25-degree tilt (Please see **Figure 8 of Volume 4: Figures Pack** for PV panel detail).

3.5. The Proposed Development infrastructure and access track take up, **15,294.5m²** (including piling). The total redline incorporates **709,391.0m²**. This means that approximately **2.15%** of the site is for development and the remaining **97.75%** is for landscape enhancement and biodiversity improvement. Therefore, the area of land utilised for the Solar development is much smaller than the overall Site area.

3.6. Areas of new hardstanding would be limited to the foundations and stone access track. All PV panels will sit on top of pile driven poles whilst all buildings will be situated on reinforced concrete foundations. All the remaining land within the two development compounds will be grassland and therefore permeable.

3.7. The Proposed Development would generate and export energy to the grid for a period of up to 35 years from the date of first becoming operational. After the 35-year generation period the development would be decommissioned, and the land restored back to present use and condition or alternatively a 15 year extension applied for.

3.8. The key components of the development can be summarised as follows:

Up to:

- 1,333 module racks in total. Total Area = 92.7m²
  - Large Racks – 897 Racks / 50,232 Modules / 8,970 pile driven poles

    Total Area – 71.8m²

- Small Racks – 435 Racks / 12,180 Modules / 2,610 pile driven poles

  Total Area – 20.9m²

- 13 x Transformers (3.8m (L) x 3.8m (W)) – Total Area = 187.7m²
- Fence is mesh fencing with wooden posts at 3.5m centres. The fence is 2m high with a 0.1m gap at the bottom. The total length is 7,500.8m with a total of 2,143 posts. Total Area = 64.3m²
- CCTV Posts are 3.5m in height and we have 58 (0.65m x 0.75m foundations) Total Area = 28.3m²
- The internal access track is 3.5m wide and will involve an average of 300mm depth of soil removed. Local widening at turns for access reasons. Occasionally they will use a geosynthetic reinforcement or soil stability to reduce depth. Total length approximately 2,455.5m (8,594.1m² in total)
- Cable trenches are circa 1m deep and up to 1m wide. Estimated at 3,250m in length.
- 1 x Temporary Construction Compounds (50.0m (L) x 60.0m (W)) – Total Area = 3,000m²
- 4 x Storage Container (13.7m (L) x 2.4m(W)) – Total Area = 131.5m²
- Aux Transformer (2.9m (L) x 2.3m (W)) – Total Area = 6.7m²
- Substation (7.7m (L) x 2.6m (W)) – Total Area = 20.0m²
- Monitoring House (3.9m (L) x 3.2m (W)) – Total Area = 12.5m²

3.9. The proposed design is based on informed assumptions of the most likely option for, however, as with all technology, solar infrastructure is continually advancing and becoming more efficient and whilst various infrastructure components are described in this application, it is proposed that the most efficient infrastructural specifications available at the time of construction will be used. These may vary slightly from the indicative details described in this report, but this is not expected to result in a significant departure from the details specified.

3.10. In devising the proposed design and layout, Renantis UK Limited has employed specialist consultants to review their operational requirements and advise on any resulting environmental effects and/or necessary mitigation measures. On this basis, and as this DAS and the associated Chapters and Annexes in Volumes 2 and 3 will confirm, the proposed layout and design is considered to strike an optimum balance between energy production from renewable resources and all environmental and technical consideration.

Detailed Development Description

3.11. This Section provides a detailed breakdown and description of the design and layout details identified within the preceding section of this Design & Access Statement.

Module array and racking system

3.12. The proposal comprises the installation of southwest facing, ground mounted solar arrays on metal frames running from typically from northwest so southeast across the site. The mounted solar panels will have a maximum height of 3m above ground level and at the lower end will be 0.6m above the ground, allowing for sheep to graze the grass beneath the panels.

3.13. The proposal includes the installation of ground-mounted solar panels on metal frames, arranged in a southwest-facing direction and running northwest to southeast across the site. The panels will be mounted at a maximum height of 3.0m above ground level, with the lower edge 0.8m above the ground, allowing sheep to graze beneath them.

3.14. The panels have a glass surface coated to maximize daylight absorption and minimize glare. Each mounting frame will support two panels in a portrait configuration, tilted between 10 and 30 degrees to optimize sunlight capture. These panels are fixed in place and do not track the sun.

3.15. The mounting frames, made of galvanized aluminium or steel with a rough matte finish, will be pile-driven into the ground without the need for concrete foundations. The frame piles have a thin 'H' or 'Z' shape, minimizing ground disturbance and eliminating the need for excavation. They will be driven approximately 1.5m into the ground.

3.16. Small inverters will be attached to the solar array piles beneath the panels. When the site is decommissioned, the frame piles can be easily removed with minimal impact on the ground.

3.17. Please refer to **Figure 8 of Volume 4: Figure Pack** of this Application for further details. Please also see Chapter 2 Description and Alternatives for further details on design, infrastructure and site selection.

Transformers

3.18. The 13 inverter/transformer AC units convert the Direct Current (DC) into an Alternating Current (AC) which is compatible with the National Grid. The transformer will either be housed in a cabinet or externally, surrounded by a fence and accompanied by a switchgear cabinet. The transformer units measure 2.9m by 2.3m (total ground disturbance area of 86.7m^2) and are found throughout the site.

3.19. Please refer to **Figure 11 of Volume 4: Figure Pack** for further details.

Customer Substation

3.20. The design includes 1 No. customer substation located in field no. 18. The customer substation will be built upon a concrete pad foundation. It measures 50m by 60m. This equates to a total area of ground disturbance of 3,000m2 overall.

3.21. Please refer to **Figure 13 of Volume 4: Figure Pack** for further details.

Aux Transformer

3.22. The design includes 1 No. aux transformer which is located within the substation. It measures 3.8m by 3.8m. This equates to a total area of ground disturbance of **14.4m²** overall.

3.23. Please refer to **Figure 12 of Volume 4: Figure Pack** for further details.

Monitoring House

3.24. A monitoring house will be located in Field 18 and will measure approximately 3.2m (W) by 3.9m (L) by 3.3m (H). This building is required to enable 24-hour remote monitoring of performance and security. The monitoring equipment rapidly identifies any faults, as well as relaying security camera footage. An aerial and/or satellite dish may be affixed to the cabinet if reception issues necessitate it.

3.25. Please refer to **Figure 14 of Volume 4: Figure Pack** for further details.

Access Track and Hardstanding

3.26. Access to the site will be from the Bryn Tail Lane which approach the site from southwest. Access for heavy goods vehicles will require some temporary surfacing and hedgerow trimming.

3.27. Where possible, existing internal farm access tracks will be utilised. Where necessary, access tracks will be laid throughout the site at the onset of the construction phase to allow for movement of delivery vehicles through the site, bringing infrastructure components and subsequent gravel/stone for further track laying. These tracks will connect the main site entrance to the internal substation and inverter/transformers for the duration of the Proposed Development's lifespan to allow for maintenance and servicing of infrastructure. They will also be used by landscapers who will maintain the screen and enhancement planting and for the landowner for agricultural purposes. The internal access tracks will measure approximately 3.5m wide with a total combined length of 2,456m (total area 8,594m^2) and will be formed by the initial topsoil stripping followed by the laying down of a geotextile/geogrid upon which crushed rock will then be layered and compacted by a roller.

3.28. Access track details can be found in **Figure 6 of Volume 4: Figure Pack** of this application.

Temporary Construction Compound

3.29. The Proposed Development includes 1 No. Temporary Construction Compounds located in field 15. This compound will be constructed by the stripping of topsoil and subsequent layering of crushed stone similar to the process for the site tracks. They will contain the site offices, chemical toilets, canteen, and a drying room. They will measure approximately 50m x 60m each giving a footprint of 3,000m^2. The temporary compounds will be removed upon completion of the construction phase and PV arrays will be located in this space.

3.30. The compounds will be fenced for security purposed for the duration of the construction period. Please see **Figure 6 Appendix 1A** for compound details.

Storage Container

3.31. Four storage containers will be located in Field 18 to house spare elements for maintenance and repair works on site. This will facilitate the ongoing maintenance of the site and reduce the need for vehicle movements as it will not be necessary to bring tools and spare parts to the site for each maintenance or repairs visit. The container measures approximately 13.7m(L) by 2.4m (W) by 3.3m (total ground disturbance of 131.5m^2).

3.32. Please refer to **Figure 15 of Volume 4: Figure Pack** for further details.

Security Fence

3.33. Fencing will comprise mesh fencing with wooden posts at 3.5m centres. The fence will be 2m high with a 0.1m gap at the bottom. The total length is 7,500.8m with a total of 2,143 posts

3.34. Please refer to **Figure 9 of Volume 4: Figure Pack** for further details.

Cable Trenches

3.35. Approximately 3,250m in length of trenching will be required for the implementation of the cable routes within the Application Site boundary. Depending on the functionality of the trenches, they will measure approximately 1m wide. The trenches will be excavated to a depth of approximately 1m and will be backfilled after the cables have been laid.

CCTV

3.36. 58 CCTV cameras will be mounted on metal poles with a total height of up to 4.5m and will be inward facing. Each camera pole will encompass a concrete foundation base of 0.8m by 0.8m. This will result in a total ground disturbance of 28.3m^2 of the Application Site area (c. 0.64m2 per camera). Please see **Volume 4 Figure 10.**

Public Access

3.37. The solar farm and main infrastructure will not be accessible by the public and security measures including permitter fencing and infrared CCTV cameras are proposed to act as a deterrent to prevent unlawful access.

Construction, Operation and Decommissioning

3.38. This Section will provide a brief summary on the construction, operational and decommissioning process associated with the Proposed Development.

Construction

3.39. The construction of the Proposed Development will likely take 12 months and is expected to commence promptly following receipt of planning permission.

3.40. A typical running order of the proposed works is as follows:

- Erection of security fencing;
- Construction of temporary site compounds and hardstanding;
- Site clearance, earthworks and civil works;
- Delivery of components and materials;
- Installation of PV panels and associated infrastructure;
- Cable works and grid connection;
- Landscaping; and
- Reinstatement works and demobilisation from Site.

3.41. Please note however, that many of these tasks will take place concurrently in order to limit the construction phase as far as is reasonably possible.

Operation

3.42. The operational phase of the Proposed Development is anticipated to have negligible trip generation potential with approximately 10-15 Light Goods Vehicles (LGVs) expected every year for scheduled maintenance checks, with additional visits required to attend to remedial issues when necessary. The operational access point will use the same entrance to the Proposed Development as during the construction period.

Decommissioning

3.43. The philosophy is that the Site can be returned to its former state at the expiry of the Proposed Development's operational lifespan including any extension. Everything from ground level to 1.00m bgl of the Proposed Development will be completely removed and either recycled or reused. It is expected that the decommissioning process should be similar to that of the construction phase and an allowance of 1 year is suggested to cater for any unforeseen delays that could be experienced.

3.44. The traffic effects during the decommissioning phase can only be fully assessed closer to that period. As elements of the Proposed Development are likely to remain in-situ, the traffic flows associated with the decommissioning works will be higher than those associated with the

construction phase. The construction phase therefore represents a worst-case assessment and as such, no further assessment of the decommissioning phase has been considered at this point. No potential significant decommissioning effects are predicted as part of the Proposed Development. See Annex 3: Construction Traffic Management Plan, Volume 3 for further details.

4. PLANNING POLICY CONTEXT

4.1. This section of the DAS discusses the national policy context with regard to Climate Change, Sustainability and Renewable Energy in Wales as well as the national planning policy context, local planning policy context and other material considerations relevant to the determination of this application

National Policy, Legislation and Guidance on Climate Change, Sustainability and Renewable Energy

4.2. There is a range of legislation, policy and guidance coming from the Welsh Government which support the transition to Net Zero and the continued deployment of renewable and low carbon energy infrastructure. This section will discuss this range of legislation, policy and guidance which provides a useful context to the national planning policy, local planning policy and other material considerations outlined later in this section by which the Proposed Development will be judged.

The Well-being of Future Generations (Wales) Act 2015

4.3. The Well-being of Future Generations (Wales) Act 2015 is a unique piece of legislation in Wales aimed at improving the social, economic, environmental, and cultural well-being of Wales. The Act sets out seven well-being goals that public bodies must work towards, ensuring that decisions made today consider their long-term impact on future generations. The seven well-being goals are:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language
- A globally responsible Wales

4.4. The PPW explicitly references the Well-being of Future Generations (Wales) Act 2015. It states that planning functions in Wales must align with the principles of sustainable development as outlined in the Act. This means that development proposals should contribute to the well-being goals set out in the Act, such as creating a prosperous, resilient, healthier, more equal, cohesive, culturally vibrant, and globally responsible Wales.

Environment (Wales) Act 2016

4.5. The Environment (Wales) Act 2016 is a piece of legislation passed by the Welsh Government aimed at promoting the sustainable management of natural resources in Wales. The Act sets out a framework for integrating environmental, social, and economic considerations into decision-making processes. It includes provisions on biodiversity, climate change, waste management, and flood risk management, among other areas.

4.6. Furthermore, the Act places a duty on Welsh Ministers to set targets for reducing greenhouse emissions and also to set carbon budgets. Section 29 'The 2050 emissions target;' legally binds Wales to achieving at least 100% decarbonised system by 2050, demonstrating the Welsh Government's commitment to net-zero emissions.

Prosperity for All: A Low Carbon Wales (2019) [1]

4.7. Prosperity for All: A Low Carbon Wales is the first statutory decarbonisation plan produced by the Welsh Government. It is a comprehensive plan outlining a collection of 100 policies and proposals aimed at helping Wales meet its carbon budget for 2016-2020 and achieve its emission reduction targets for 2030.

4.8. The sector pathways chapters in this Plan set out how policies and proposals contribute to meeting sector emission reduction pathways. In relation to the power sector, this plan has the ambition to make low carbon electricity the main source of energy in Wales. It sets a target to reduce emissions by 37% from baseline levels by the year 2030 by: (1) reducing overall power generation from fossil fuels; (2) increasing the deployment of renewable energy to meet the target for Wales to generate 70 per cent of its electricity consumption from renewable energy by 2030; and (3) increasing support for innovation in the Power Sector.

4.9. **Policy 26 – 'Implementing Energy Consenting, Planning & Permitting policy'** states that *"the planning system in Wales plays a key role in facilitating clean growth and decarbonisation, and helps build resilience to the impacts of climate change. Achieving our strategic decarbonisation goals is highlighted as a key driver, which all development plans must support."*

The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations (2021)[2]

4.10. The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021 ensure that carbon budgets remain aligned with Wales' net-zero trajectory, providing regulatory certainty for the renewable energy sector.

[1] https://www.gov.wales/prosperity-all-low-carbon-wales
[2] https://www.legislation.gov.uk/wsi/2021/332/made

The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations (2021)[3]

4.11. The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021 revise carbon budgets for 2021-2025 and 2026-2030, setting average reduction targets of 37% and 58% below baseline levels, respectively. Additionally, they impose a 0% limit on the use of carbon offsets for 2021-2025, reinforcing the emphasis on direct emissions reductions.

The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations (2021)[4]

4.12. The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021 set updated targets for 2030 and 2040, increasing emissions reductions from 45% and 67% to 63% and 89%, respectively. These interim targets align with the 2050 goal and prioritise climate action in the 2020s in line with the Climate Change Committee's recommendations.

Net Zero Wales: Carbon budget 2 (2021 – 2025)[5]

4.13. Net Zero Wales (NZW) is a strategic plan by the Welsh Government aimed at reducing greenhouse gas emissions to achieve net-zero carbon emissions by 2050. It sets out the Welsh Government's policies and proposals for meeting the second carbon budget period 2021-2025 as required under The Environment (Wales) Act 2016 whilst also laying the groundwork for further reductions to meet the 2030 target, ultimately reaching net-zero by 2050.

4.14. NZW states that for the electricity and heat emissions sector to meet carbon budget 2 and enter onto a pathway for delivering net zero emissions across Wales by 2050 *"increasing electricity from low carbon and variable renewables"* will be essential.

4.15. NZW proposes a range of policies in relation to decarbonising the electricity sector and meeting the targets of Carbon Budget 2 and net zero by 2050, of particular relevance are polices:

Policy 22 – Increasing renewable energy developments on land through our planning regime which states that the Welsh Government will improve and unify the consenting of energy projects in Wales to provide a quicker and more proportionate consenting regime for energy infrastructure.

Renewable Energy Deep Dive: Recommendations – Update 3 (March 2024)[6]

4.16. The Renewable Energy Deep Dive Biannual Recommendations Update 3 is a report published by the Welsh Government. It outlines the progress and recommendations for significantly scaling up renewable energy in Wales. It has the vision for Wales to generate renewable

[3] https://www.legislation.gov.uk/wsi/2021/334/made
[4] https://www.legislation.gov.uk/wsi/2021/338/made
[5] https://www.gov.wales/net-zero-wales-carbon-budget-2
[6] https://www.gov.wales/renewable-energy-deep-dive-biannual-recommendations-update-3-community-and-local-energy-html

energy to at least fully meet our energy needs and utilise surplus generation to tackle the nature and climate emergencies and promotes actions to reduce energy demand and maximise local ownership retaining economic and social benefits in Wales.

National Planning Policy and Local Planning Policy

4.17. This section of the DAS discusses the national and local planning policy and guidance relevant to the Proposed Development.

4.18. Section 38(6) of the Planning and Compulsory Purchase Act 2004[7] establishes a plan-led approach to development requiring proposals to accord with the adopted local development plan, unless material considerations indicate otherwise.

4.19. The planning application will be determined in accordance with Section 70(2) of the Town and Country Planning Act 1990 (as amended)[8] which requires local planning authorities when dealing with planning applications to have regard to the provisions of the statutory development plan and other material considerations.

4.20. It is important to note that the development plan must be understood as a whole. This approach to the interpretation of policy is endorsed in relevant case law judgments; notably that of Sullivan J in Rochdale [R v Rochdale MBC ex parte Milne [2001][9] reported at 81 P&CR 365]. In this case, it was concluded that in assessing compliance with the development plan it is not necessary to comply with all policies; there will be some core or site-specific policies that take precedence over others. As such, there will be dominant policies which are more relevant to the Proposed Development which should guide the development proposal.

National Planning Policy

Planning Policy Wales (Edition 12) (February 2024)

4.21. Planning Policy Wales (PPW) is the national planning policy framework for Wales. It was first published in 2002 and has since been updated, with the latest edition being published on 19th July 2024. It sets out the Welsh Government's land use planning policies and how these are expected to be applied and is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with the PPW provide the national planning policy framework for Wales. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

4.22. **Paragraph 1.2** outlines the primary objective of PPW which is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social,

[7] https://www.legislation.gov.uk/ukpga/2004/5/contents
[8] https://www.legislation.gov.uk/ukpga/1990/8/contents
[9] https://www.casemine.com/judgement/uk/5a8ff7d260d03e7f57eb24e1

economic, environmental and cultural well-being of Wales. This is reiterated in paragraph 2.8 which states that Planning policies, proposals and decisions must seek to promote sustainable development and support the well-being of people and communities across Wales.

4.23. Paragraph 1.22 states that planning applications must be determined in accordance with the adopted plan, unless material considerations indicate otherwise.

4.24. Paragraph 2.13 refers to *"The Key Principles"* which are *"Growing our economy in a sustainable matter"*, *"Making best use of resources"*, *"Facilitating accessible and healthy environments"*, *"Creating & sustaining communities"* and *"Maximising environmental protection and limiting environmental impact"*. Paragraph 2.14 goes on to state that these key principles will *"act as a catalyst for the positive delivery of the planning system across Wales"*.

4.25. Paragraph 2.26 states that Local Planning Authorities should take a balanced approach when deciding a planning application by ensuring that all social, economic, environmental and cultural benefits are considered in accordance with the five ways of working to ensure the Well-being of Future Generations Act and the Sustainable Development Principle are being properly implemented. Paragraph 2.27 goes on to identify a long list of key factors Local Planning Authorities should consider in the assessment process split into social, economic, environmental and cultural considerations. The key considerations most relevant to the Proposed Development include:

- *"Who will benefit and suffer any impacts from the proposal;"*
- *"How the proposal would support the achievement of a more prosperous, low carbon, innovative and resource efficient Wales;"*
- *"How far the proposal supports the conditions that allow for the use of the Welsh language;"*
- *"Will important features of the natural and built environment be protected and enhanced;" and*
- *"Does it support decarbonisation and the transition to a low carbon economy."*

4.26. Paragraph 3.9 mentions that:

"The special characteristics of an area should be central to the design of a development. The layout, form, scale and visual appearance of a proposed development and its relationship to its surroundings are important planning considerations."

4.27. Paragraph 3.30 confirms the planning system's importance in addressing the climate crisis whilst also recognising the benefits of transitioning to a low carbon economy. It states that:

"The planning system plays a key role in tackling the climate emergency through the decarbonisation of the energy system and the sustainable management of natural resources.

The 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."

4.28. Section 5.6 (paragraphs 5.6.1 to 5.6.13) of PPW discusses 'the Rural Economy' where it states that:

"Planning authorities should adopt a positive approach to diversification projects in rural areas … diversification can strengthen the rural economy and bring additional employment and prosperity to communities"

Furthermore, in paragraph 5.6.13 PPW mentions that renewable energy proposals such as solar installations are regarded as diversification projects which will help to increase the viability of rural enterprises by reducing their operating costs and that these schemes should be supported where there is no detrimental impact on the environment and local amenity.

4.29. Section 5.7 (paragraphs 5.7.1 to 5.7.15) of PPW discusses 'Energy'. In this section, PPW states that Low Carbon Electricity must become the main source of energy in Wales and that there needs to be a focus on reducing emissions from fossil fuel sources, whilst driving further renewable generation. It mentions that the planning system should facilitate delivery of both this and Welsh, UK and European targets on renewable energy.

4.30. Section 5.9 (paragraphs 5.9.1 to 5.9.30) of PPW considers 'Renewable and Low Carbon Energy'. It states the following:

"Outside identified areas, planning applications for renewable and low carbon energy developments should be determined based on the merits of the individual proposal. The local need for a particular scheme is not a material consideration, as energy generation is of national significance and there is a recognised need to optimise renewable and low carbon energy generation." (paragraph 5.9.15)

"In determining applications for the range of renewable and low carbon energy technologies, planning authorities should take into account:

- *the contribution a proposal will make to meeting identified Welsh, UK and European targets;*
- *the contribution to cutting greenhouse gas emissions; and*
- *the wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development." (paragraph 5.9.19)*

"The social, environmental and economic (including job creation) benefits associated with any development should be fully factored into and given weight in the decision-making process." (paragraph 5.9.25)

Future Wales: The National Plan 2040

4.31. Future Wales: The National Plan 2040 (FW2040) is the Welsh Government's strategic framework for development in Wales up to the year 2040. It replaces the previous Wales Spatial Plan and is the highest tier of development plan in Wales, meaning that planning decisions at every level of the planning system in Wales must be taken in accordance with the development plan as a whole. It aims to address key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.

4.32. FW2040 sets 11 Outcomes which are overarching ambitions based on the national planning principles and national sustainable placemaking outcomes set out in Planning Policy Wales. They are described as a statement of where the Welsh Government wants Wales to be in 20 years' time. Three of the Outcomes are of relevance to the Proposed Development:

- 9 - A Wales where people live in places that sustainably manage their natural resources and reduce pollution;
- 10 - A Wales where people live in places with biodiverse, resilient and connected ecosystems; and
- 11 - A Wales where people live in places which are decarbonised and climate-resilient.

4.33. Section 4 of FW2040 outlines the spatial strategy for Wales where it proposes a number of policies relevant to the Proposed Development including:

Policy 1 – Where Wales will grow

Under this policy *FW2040 mentions that "the Welsh Government supports sustainable growth in all parts of Wales"* and it highlights that *"rural areas have an important function as providers of food, energy and mineral resources".*

Policy 5 – Supporting the rural economy

Under this policy *FW2040 states that* "Rural areas play a crucial role in helping decarbonise Wales by providing suitable environments for different forms of renewable energy".

Policy 8 – Flooding

Under this policy FW2040 says that *"It must be ensured that projects do not have adverse impacts on international and national statutory designated sites for nature conservation and the features for which they have been designated."*

Policy 9 – Resilient Ecological Networks and Green Infrastructure

Under this policy FW2040 outlines that *"action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment."*

Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure

Under this policy FW2040 mentions that *"The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency."*

They also states that *"Proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities."*

Furthermore, FW2040 sets the following ambitious targets in relation to renewable energy which are outlined in the supporting text to policy 17:

"For 70% of electricity consumption to be generated from renewable energy by 2030.

For one gigawatt of renewable energy capacity to be locally owned by 2030. 96

For new renewable energy projects to have at least an element of local ownership from 2020."

Policy 18 – Renewable and Low Carbon Energy Developments of National Significance

Policy 18 of FW2040 provides detailed information on the requirements that renewable energy proposals that are of National Significance should meet. It states that:

"Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:

1. outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);

2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;

3. there are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been

designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);

4. there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;

5. the proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;

6. there are no unacceptable adverse impacts on statutorily protected built heritage assets;

7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;

8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);

9. there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;

10. the proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;

11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.

The cumulative impacts of existing and consented renewable energy schemes should also be considered."

4.34. Section 5 of FW2040 highlights the important role regional planning will play in in the future three-tiered planning system in Wales and proposes a number of region-specific policies in relation to this. Policies with relevance to the Proposed Development include; Policy 33 which outlines that Cardiff, Newport and the Valleys will be the main focus for growth and investment in the southeast region; and Policy 35 which supports the establishment of the Valleys Regional Park.

Technical Advice Notes

4.35. Technical Advice Notes (TANs) in Wales provide detailed planning advice to Local planning Authorities in the preparation of local development plans. They are part of the national planning policy framework and offer guidance on various aspects of planning and development. The key guidance topics relevant to the Proposed Development are:

- TAN 5: Nature Conservation and Planning

- TAN 6: Planning for Sustainable Rural Communities
- TAN 11: Noise
- TAN 12: Design
- TAN 15: Development and Flood Risk
- TAN 16: Sport and Recreation
- TAN 18: Transport
- TAN 20: Planning and the Welsh Language
- TAN 23: Economic Development Manual for Streets
- TAN 24: The Historic Environment

Local Planning Policy

Rhondda Cynon Taf Local County Borough Local Development Plan 2006 - 2021

4.36. Rhondda Cynon Taf Local County Borough Local Development Plan (LDP) 2006 – 2021 is the currently adopted local development plan for the jurisdiction of Rhondda Cynon Taf Borough Council, adopted in March 2011. It provides the development strategy and spatial policy framework for Rhonnda Cynon Taf over the 15 year period between 2006 and 2021 and is used by the decision makers to guide and control development, providing the basis for consistent and appropriate decision-making.

4.37. Rhondda Cynon Taf Local County Borough Local Development Plan 2006 – 2021 contains a range of strategic and development management policies of relevance to the Proposed Development, the key pertinent policies to the proposal are listed and discussed in greater detail below:

- Policy AW 12 – Renewable & Non-Renewable Energy

Renewable & Non-Renewable Energy

4.38. The LDP states under Policy AW 12 that proposals which encourage the harnessing of renewable energy will be supported in principle where it is demonstrated that there is no unacceptable effect upon:

"the interests of soil conservation, agriculture, nature conservation, wildlife, natural and cultural heritage, landscape importance, public health and residential amenity"

Effects on the matters listed above have been considered in detail in **Chapters 4 - 12 in Volume 2 and Annexes 1 – 4 in Volume 3** which ultimately found that the Proposed Development

would not have an unacceptable effect upon soil conservation, agriculture, nature conservation, wildlife, natural and cultural heritage, landscape importance, public health and residential amenity.

4.39. Policy AW 12 also states that *"Development proposals should be designed to minimise resource use during construction, operation and maintenance"*

The Proposed Development

4.40. In addition to the above key pertinent polices, the following Local Plan strategic and development management policies are also considered to be of relevance to the Proposed Development:

- Policy CS 2 – Development in the South
- Policy CS 10 – Minerals
- Policy AW 2 – Sustainable Locations
- Policy AW 4 – Community Infrastructure & Planning Obligations
- Policy AW 5 – New Development
- Policy AW 6 – Design and Placemaking
- Policy AW 7 – Protection and Enhancement of the Built Environment
- Policy AW 8 – Protection and Enhancement of the Natural Environment
- Policy AW 10 - Environmental protection and Public Health
- Policy AW 14 – Safeguarding of Minerals
- Policy SSA 23 – Special Landscape Areas

4.41. In addition to the above Development Plan policies, the following adopted Supplementary Planning Documents and Guidance are also of relevance and have been considered in the preparation of the planning application:

- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: Design and Placemaking;
- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: The Historic Built Environment;
- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: Design and Placemaking;

- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: Planning Obligations; and
- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: Access Circulation & Parking Requirements.
- Rhondda Cynon Taf Local County Borough – Supplementary Planning Guidance: Employment Skills.

Rhondda Cynon Taf County Borough Council - Revised Local Development Plan 2022 - 2037

4.42. Rhondda Cynon Taf County Borough Council are in the process of preparing a Revised Local Development Plan for the period 2022 – 2037. This process formally began in March/April 2022. The first step in the process of preparing a new local development plan is to prepare a Delivery Agreement providing a timeline of the key steps for the preparation of the new LDP and a community involvement scheme setting out how and when stakeholders can contribute to the plan preparation process. A Draft Delivery Agreement was produced and approved in March/April 2022, which identifies the key stages in the LDP preparation process and sets out the proposed approximate timetable for completing those stages. The final stage of the LDP 'Adoption' is projected to happen in May 2026.

Making Rhondda Cynon Taf Carbon Neutral by 2030

4.43. Rhondda Cynon Taf Council adopted the Climate Change Strategy – 'Think Climate Rhondda Cynon (2022-2025)', with the goal of becoming a carbon neutral organisation by 2030. It outlines several commitments the Council have made to reduce carbon emissions relating to Council activities and proposes several initiatives under the headings of places, prosperity and people to achieve a carbon neutral Council by 2030.

Rhondda Cynon Taf County Borough Council – Decarbonisation Strategy 2023 – 2025

4.44. Rhondda Cynon Taf Council published a Decarbonisation Strategy and Action Plan in March 2023 outlining how the Council will work to make itself a carbon neutral organisation by 2030 and contribute to the global effort to address the climate emergency. The strategy aims to mitigate at least 90% of the council's emissions by 2030, balancing any remaining emissions with greenhouse gas removals. It proposes 46 initiatives within the action plan under the headings 'operational', 'supply chain' and 'land use & renewables' to meet the 2030 aim.

Rhondda Cynon Taf Local Area Energy Plan

4.45. The Rhondda Cynon Taf Local Area Energy Plan is an ambitious and comprehensive roadmap, tailored to meet the energy needs Rhondda Cynon Taf whilst aligning with the Council's broader decarbonisation coals for the County Borough. It aims to decarbonise the local energy

system and recognises the need to build a sustainable, resilient and prosperous future for the region. The Local Area Energy Plan addresses the energy challenges specific to the County Borough of Rhondda Cynon Taf, with practical and scalable solutions, encompassing a broad spectrum of initiatives, such as enhancing energy efficiency in homes and businesses, increasing the deployment of renewable energy sources, and exploring innovative technology.

4.46. The Local Area Energy plan proposes 4 energy objectives that need to be achieved to create the enabling conditions to deliver this plan which include 'maximise reductions in carbon emissions while minimising financial costs' and 'provide a resilient energy system, capable of increasing local clean energy provision to meet a greater proportion of future energy demand'. Moreover, a number of energy propositions are proposed within this plan which describe what needs to change between now and 2050 to decarbonise Rhondda Cynon Taf's local energy system and achieve net zero by 2050. This includes 'deploy renewables' and 'reinforce and transition energy networks'.

4.47. The Local Area Energy Plan recognises that the local energy system will need to change significantly to achieve net zero by 2050. It projects that by 2050 the local energy system in Rhondda Cynon Taf might facilitate up to 1150 MW of ground-mounted solar PV installed capacity if the target of net zero is to be met. This is an almost 4000% increase on current ground mounted solar PV installed capacity in the Borough, which is estimated at 30MW, highlighting the need for rapid expansion of solar development in the next few decades to meet emissions targets.

Summary

4.48. This section of the DAS demonstrates that there is extensive policy support for renewable energy generation within Wales, Southeast Wales and Rhondda Cynon Taf. Policy set out targets and timelines for reduction of energy system emissions, increasing renewable energy development and promoting sustainable development which has limited impacts to the local community.

4.49. The Proposed Development would make an important contribution towards achieving the Welsh Government's target of achieving a reduction in 55% of energy system emissions by 2035. Furthermore, as impacts arise, they will be mitigated in accordance with national and local planning policy. The policy context has been taken into account in the design considerations of the scheme, and it is considered that this policy context provides clear, and favourable, support for the Development at this location

5. DESIGN STRATEGY

Overview

5.1. The design strategy for the Proposed Development establishes the overarching approach to the layout and configuration of the solar farm. It provides the foundation for the design process, incorporating refinements made in response to technical, environmental, and planning considerations. These include factors such as landscape and visual amenity, cultural heritage, noise, ecology, hydrology, geology (including peatland considerations), feasibility of construction, and interactions with Common Land. The strategy has evolved iteratively through the Environmental Impact Assessment (EIA) process, ensuring an optimised design that balances renewable energy generation with environmental and technical constraints.

Design Approach

5.2. The principal aim of the design strategy is to create a solar farm that is efficient, environmentally sensitive, and well-integrated within the surrounding landscape. The approach seeks to maximise energy output while minimising environmental and technical impacts. The topography and landform, ensuring solar panels are positioned on appropriate terrain to optimise solar exposure. The scale and visibility of the solar farm, ensuring it remains sympathetic to the local landscape character. The mitigation of potential environmental effects, including impacts on ecology, hydrology, and heritage assets.

Design Objectives

5.3. The design of the Proposed Development has been guided by the following key objectives:

- Maximising Renewable Energy Output
- Ensuring optimal solar panel orientation and layout to maximise efficiency and energy generation across the site.
- Using the latest solar photovoltaic (PV) technology, incorporating high-efficiency modules to maximise output while minimising land take.

Landscape and Visual Integration

5.4. Developing a layout that is cohesive and well-integrated within the existing landscape, minimising visual intrusion.

5.5. Utilising existing natural screening and incorporating additional planting where necessary to reduce visual impact.

Environmental Protection and Mitigation

5.6. Avoiding sensitive ecological areas and ensuring biodiversity enhancement, including habitat restoration and the creation of ecological corridors.

5.7. Maintaining appropriate setbacks from watercourses, wetlands, and hydrologically sensitive areas to protect local hydrology and groundwater quality.

5.8. Avoiding areas of deep peat and Groundwater Dependent Terrestrial Ecosystems (GWDTEs) to minimise ecological disruption.

Residential Amenity Considerations

5.9. Ensuring that no individual residential property is unduly affected by overbearing visual impacts.

5.10. Minimising glint and glare effects, particularly in relation to nearby dwellings and roads, through strategic panel placement and mitigation measures.

Cultural and Heritage Protection

5.11. Designing the layout to avoid adverse effects on designated heritage assets, such as Scheduled Monuments, Listed Buildings, and locally significant heritage sites.

5.12. Maintaining appropriate buffer zones to preserve the setting and character of cultural heritage assets.

Sustainable Land Use and Common Land Considerations

5.13. Minimising land take within Common Land, ensuring that access and recreational opportunities are preserved where applicable.

5.14. Exploring dual land use opportunities, such as sheep grazing or wildflower meadows, to maintain agricultural productivity and biodiversity.

Minimising Infrastructure and Construction Impacts

5.15. Locating infrastructure such as inverters, substations, and access tracks in areas that minimise visual and environmental impacts.

5.16. Reducing the number of new access roads required by utilising existing farm tracks where possible.

Aviation and Telecommunications Considerations

5.17. Ensuring compliance with aviation regulations, minimising any impact on air traffic control or radar systems.

5.18. Maintaining appropriate setback distances from telecommunications infrastructure, working with operators to resolve potential conflicts.

Site Constraints and Design Evolution

5.19. The iterative design process has been informed by several key constraints, which have shaped the final layout of the Proposed Development:

Ecology and Biodiversity

5.20. Avoidance of ecologically sensitive habitats, including wetlands, marshy grassland, and priority habitat areas.

5.21. Observing buffer zones around protected species habitats, such as nesting sites for birds and foraging areas for bats.

5.22. Implementing biodiversity enhancement measures, including hedgerow planting, wildflower meadows, and bat boxes.

Residential Amenity

5.23. Conducting a comprehensive visual amenity assessment to ensure that no single property experiences significant adverse impacts.

5.24. Adjusting panel placement to increase separation distances from residential properties where necessary.

Hydrology and Watercourse Protection

5.25. Maintaining appropriate buffer zones around watercourses where feasible.

5.26. Minimising the number of watercourse crossings required for access roads and infrastructure.

5.27. Avoiding Private Water Supply (PWS) catchment areas where possible to protect groundwater resources.

Cultural Heritage Considerations

5.28. Designing the layout to avoid direct impacts on designated heritage assets, such as Scheduled Monuments.

5.29. Maintaining appropriate separation distances from non-designated but locally significant heritage features.

Geological Constraints

5.30. Avoiding construction on areas with deep peat (>0.5m) where feasible to minimise carbon loss and hydrological disruption.

Topographical Constraints

5.31. Avoiding steep slopes to ensure constructability and minimise the need for significant cut-and-fill engineering works.

Utilities and Infrastructure

5.32. Maintaining a safe buffer distance from overhead power lines and gas pipelines.

5.33. Ensuring that the development does not interfere with existing telecommunications links or infrastructure.

The Principle of Development

5.34. At a national policy level, the PPW recognises the need to meet the challenge of climate change as set out in Chapter 5 of the Framework. As referred to in section 7, PPW recognises that radical reductions in greenhouse gas emissions are essential and looks to support renewable energy generation where its impacts are, or can be made, acceptable. It is therefore clear that there is overwhelming support at a national level for this type of development, and a demonstrable need for Wales to continue to deliver renewable energy projects.

5.35. At a local level and as discussed above, Rhondda Cynon Taf County Borough Council clearly provide support for renewable energy infrastructure development in appropriate locations. Policy AW 12 offers specific support for Solar Farm development, providing significant any adverse impacts are addressed satisfactorily, and that any residual harm is outweighed by the wider benefits associated with the proposals.

5.36. Given the above subject to there being no significant adverse effects, and where any residual harm is outweighed by the benefits of the proposals, the principle of the Proposed Development is considered acceptable.

Landscape and Visual Impact

5.37. This application is supported by an LVIA which provides an assessment of the potential direct and indirect effects of the Proposed Development upon the landscape resources, views and visual amenity receptors within the existing landscape and visual baseline across a 5km study zone.

Construction Effects

5.38. Landscape and visual effects and their significance at construction stage will be temporarily adverse They will be experienced in the vicinity of the Site, from locations with open or partial views. Construction works may be visible beyond the 5km core study area in views at elevation towards the hill side location of the site. While discernible, the construction effects in long-distance views are not considered significant as they will form part of a wide panoramic view in which they form one visible component of many.

Operational Effects

5.39. The introduction of the Proposed Development will locally alter the existing agricultural use of the Site to a landscape comprising a solar farm with associated infrastructure, mixed agricultural land use and new hedgerow and tree planting. During operation, the Proposed Development will initially have a Moderate adverse landscape effect on the characteristics of the Site. Although mitigation planting will help contain the lower elevations of the Proposed Development.

5.40. The Proposed Solar Farm will directly affect LCA 37 South Wales Valley and will result in a solar farm located over 70.9 hectares of this landscape. This will result in a localised direct Moderate adverse landscape effect within c. 2km and a Minor adverse effect across the wider extents of these landscapes.

5.41. In terms of designated landscapes, the introduction of the Proposed Development will indirectly affect a small area of the eastern part of a Special Landscape Area, however, through the ZTV and on-site fieldwork, visibility from within this area is extremely limited, as shown across the visual assessment. It is considered unlikely that the Special Qualities of the Special Landscape Area will be compromised by the introduction of the Proposed Development.

Residual Effects

5.42. Given the scale and location of the Proposed Development, the main landscape and visual mitigation measures focus on mitigation planting to screen views towards the Proposed Development. Hence measures will be implemented immediately and come into effect following the completion of construction works. The existing vegetation, while retained (i.e. it is off-site and outside the control of the applicant), will screen the lower parts of the existing and Proposed Development.

5.43. Considering the possible often localised nature of available views, landscape mitigation will further reduce landscape and visual effects. There may be a slight increase in visual effects during the winter season due to the absence of foliage. The majority of differences in visibility will be experienced locally within an approximate 250m radius, depending on the pruning status of intervening hedgerows as well as the amount of other intervening vegetation. Overall, the difference in visibility is considered not material.

5.44. In considering the nature of residual effects, it should be recognized that large scale renewable energy projects are likely to generate significant effects on landscape character and visual amenity. In particular, a change in landscape character at a local level is inevitable as a result of the change in land-use and the introduction of solar panels. Visual effects from the Proposed Development at specific locations have been mitigated as a result of measures within the Landscape and Ecological Management Plan, with significant effects reducing in nature as mitigation is established.

Visual Effects

5.45. Potential views of the Proposed Development will be experienced by a number of local receptors whilst longer distance views will largely be limited to a small part of the overall Proposed Development experienced from higher elevations to the west, north and south.

5.46. The lower elevations of the solar farm and associated structures will be partly contained by the mix of hedgerows and trees within the boundaries of the Site and surrounding farmland, along with screening by built elements and local topographical variations. The higher elevations of the Proposed Development will be evident in longer distance views mainly to the south, west, southeast and southwest.

5.47. The appraisal identifies operational Major/Moderate adverse visual effects from the PRoW network within the Site. However, the significance is fleeting, as quickly the views are screened given the nature of the topography and existing screening, quickly screening visibility in its entity. Moderate adverse visual effects are identified from the recreational and residential receptors within close proximity to the site, however, beyond a distance of c. 1km where the Proposed Development is evident in views visual effects largely reduce to Minor adverse effects.

Cumulative

5.48. The visibility of the development itself is localized, and as one progresses through the study area, natural and architectural screening elements quickly diminish the visual presence of the solar arrays. This ensures that while the development contributes to the cumulative landscape changes, its impact remains limited and is mitigated by the surrounding environment and design considerations. Minor adverse to no change cumulative visual effects are anticipated for the majority of visual receptors considered in the appraisal.

Mitigation

5.49. Mitigation measures are proposed to help reduce any potential landscape and visual effects. Trees will be introduced along sections of the north-western and southwestern boundaries. Hedgerows and infill planting will also be introduced along open sections of the boundaries to help screen inward views and provide additional biodiversity opportunities. The mitigation screening is mindful not to screen views of the surrounding landscape, therefore it has been

designed to allow the receptor to see over and not limit views to many scenic aspects of this landscape. Mitigation measures can be found in **Figure 11.22a – Figure 11.22e of Volume 2 Chapter 11A.** As the mitigation planting becomes established it will help contain elements of the Proposed Development at lower elevation.

Ecology and Biodiversity Enhancements

5.50. This application is supported by ecological impact assessment (see **chapter 11 of Volume 3**) which outlines the impact of the Proposed Development on local ecology and suggests mitigation to avoid, reduce and minimise any potential residual impacts, with enhancements outlined that will produce a significant overall net benefit to the biodiversity value of the local area as a resulting of the Proposed Development

5.51. The desk-based assessment identified that within 20km of the Application Site boundary there are six internationally designated sites. Within 5km of the Application Site there are four nationally designated sites. Within 2km of the Application Site there are four non-statutory Sites of Importance for Nature Conservation (SINC). Two of the SINCs (Cyldach Vale and Mynydd Eglwysilane, North of Senghanydd) are located immediately adjacent to the Application Site, and Ecologically and Hydrologically connected to the Proposed Development. With the implementation of appropriate best practice and industry standard measures, identified within this Chapter **no likely significant effects were identified on any designated site**.

5.52. The Phase 1 habitat surveying undertaken in June 2021, August 2023, and June 2024 identified eighteen habitat types within the Application Site boundary and a suitable peripheral boundary buffer, which is described as the Ecological Survey Area ("ESA"). **None of the habitats beneath the development footprint are conservation priority habitats**.

5.53. The presence of, or potential presence for, protected or notable species was assessed and found that precautionary measures for badgers, bats, breeding birds, dormice, invasive flora, and reptiles are recommended to support the Proposed Development. When these measures are considered alongside the considerate site design, best practice construction, and industry standard pollution prevention measures; potential impacts from the Proposed Development **will not be significant** and there will be **no significant negative effects** upon protected or notable species.

5.54. The accompanying **Appendix 9D – Net Benefit for Biodiversity Report**, and **Landscape and Ecological Management Plan** proposes habitat creation and enhancement measures centred around the implementation of multiple types of wildflower grasslands, species rich scrub and hedgerow and tree planting across over 80% of the Application Site. With the implementation of this, **the potential of the local area to support local wildlife will increase significantly**.

Traffic and Transport

5.55. This application is accompanied by a Construction Traffic Management Plan (CTMP) (see Annex 3 of Volume 3) that outlines the overall framework for managing the movement of construction and delivery traffic to and from the Proposed Development, as well as considering the type of traffic it will generate. The traffic assessment for the operational and decommissioning phases were also considered within the CTMP.

5.56. Impacts from the operational phase of the site will only consist of between 10-15 LGVs per year. This CTMP considers elements of TAN18: Transport which are relevant to this project, namely, to include details of the existing conditions and issues relating to the Proposed Development.

5.57. Increased volumes of traffic will be generated by the Proposed Development during the construction period. However, the overall volumes of traffic generated by the Proposed Development during the construction period are considered to be quite low. During the anticipated twelve-month construction period, a total of 684 HGV deliveries will be made to the Site. During the peak construction period there will be an approximate maximum of 15 daily HGV deliveries.

5.58. The Site will be accessed from two existing access points off Bryn Tail Lane which bisect the Site.

5.59. The haulage route will likely be from the A470 to the southeast of the Site. The delivery vehicles will exit the A470 (signposted Rhydyfelin A4054) and join the A4054 to continue in a northwest direction for approximately 2.1km before taking a right turn onto Dyffryn Road. Vehicles will continue on a northeast direction for approximately 0.8km before taking a left hand turn onto Bryn Tail Lane, vehicles will continue along Bryn Tail Lane for approximately 1.4km before taking a right hand turn into Site Access 1 and left hand turn into Site Access 2.

5.60. Due to the narrow nature of Bryn Tail Lane, additional traffic management measures will be in place all along Bryn Tail Lane leading up to the site access points. This is likely to be in the form of a banksmen-controlled entry and exit from the site, or temporary traffic lights. This will be agreed prior to the construction stage of the Proposed Development with the local Council.

5.61. Temporary construction gates will be in place to stop vehicles passing over the PRoW's freely and a banksman will be required to make sure there are no members of the public in the vicinity when vehicles are passing through.

5.62. The Applicant will conduct a pre- and post-construction condition survey of Bryn Tail Lane from the access points to its junction with Masefield Way, with the Applicant liable to repair any damage to the road attributed to the construction of the Proposed Development.

5.63. The CTMP sets out a variety of specific mitigation measures that will be implemented during construction that will minimise the impact of the construction traffic on the environment and local communities; these include:

- Limitations on working times and HGV scheduling;

- Site security and signage; and,
- Measures to control emissions of dust and other airborne contaminants.

5.64. This CTMP conforms to the policies and objectives of the LP as well as the DMRB and TAN 18.

Hydrology

5.65. This application is accompanied by a Chapter assessing the effects of the Proposed Development on drainage and flood risk (see **Chapter 5 of Volume 2**). This chapter was informed by the Flood Consequence Assessment and Drainage Strategy in **Annex 1 of Volume 3**. This chapter considered the potential adverse impact of the Proposed Development on flood risk, surface water quality, flood risk management and land drainage during construction and operation.

5.66. It identified principal risks during construction to be the potential for excess fine sediment, hydrocarbons, chemicals polluting waterbodies and increase in surface water runoff volumes which could be exacerbated by the extensive earthworks that would be required at the Site.

Flood Consequences Assessment and Drainage Strategy

5.67. This application is accompanied by a Flood Consequence Assessment and Drainage Strategy (see **Annex 1 of Volume 3**) to identify the baseline geological and hydrological conditions of the site and surrounding area, to assess the potential impacts of the Proposed Development during the construction, operation and decommissioning phases, to identify the risk of flooding at the Site and to recommend mitigation measures where appropriate.

5.68. Within the Development Advice Map (DAM) and Flood Map for Planning, it shows the Site to be wholly situated within Flood Zone A and Flood Zone 1. Therefore, in accordance with TAN15, the Site is situated in an area that has less than 1 in 1000 (0.1%) (plus climate change) chance of flooding in a given year. of fluvial or tidal/coastal flooding. Consequently, a justification test is not required for this Proposed Development, however a Drainage Strategy will still be required to ensure that the Proposed Development will not increase flood risk elsewhere.

5.69. In addition to fluvial and coastal flood risk, Natural Resources Wales (NRW) also provide surface water flood maps. This indicates areas across the Site, which appear to be restricted mainly to the field drains except for a small area of surface water flooding in Field 37 and 38.

5.70. Where the NRW map demonstrates areas of surface water risk, the topographical survey, as well as aerial maps, were studied to determine if there will indeed be surface water flooding within the Site. There is an area located within Field 33 and 35 that is at risk of surface water flooding which contains only solar panels. As the solar panels will be pile driven into the ground and raised to a height of at least 0.8m off the ground, it will not increase the flood risk

elsewhere and will remain safely operational during time of a flood. Therefore, this would be appropriate and in line with the TAN 15 guidance.

5.71. This soil class has a Standard Percentage Runoff (SPR) of 0.37 which suggests that they provide excellent opportunity for infiltration. Prior to the detailed drainage design stage, which should be conditioned as part of any planning consent, infiltration testing will be undertaken in accordance with BRE 365. Should infiltration drainage not be appropriate, the drainage design will need be altered and discharge locations agreed with a revised limiting discharge rate appropriate to the drainage design. A limiting discharge rate of 2l/s would seem appropriate; however, this will be agreed with the council post consent when the detailed drainage design is being undertaken.

5.72. Multiple soakaway channels / filter drains are proposed which will be of an overall length of approximately 3,125m, with a base width of 0.50m, a 0.50m design depth and a 0.15m freeboard. They will be filled with crushed rock with a void ratio of 20%. It will provide a total storage volume of approximately 156.25m^3. This is greater than the volume of additional runoff generated as a result of the impermeable buildings (45.0m^3). It is therefore considered that this adequately mitigates the increase in flow rates as a result of the minor increase in impermeable area and provides improvement.

5.73. Additional drainage measures to be implemented on-site include the following:

- Solar Panels: current grass cover is to be retained or reinstated adjacent to and under panels in order to maximise bio-retention;
- Access Tracks: access tracks are to be unpaved and constructed from local stone. Temporary swales or similar shall be utilised to collect runoff from access tracks with discharge to ground through percolation areas. Where swales are utilised, frequent check dams formed from gravels and other excavated material should be undertaken; and
- Transformer Stations: the scale of these types of structures is unlikely to warrant a formalised drainage system. Runoff from this infrastructure and any associated hard standing should be directed to a percolation area for discharge to ground. Should surface water accumulate around any of these locations then a simple soakaway can be constructed to allow water soak into the underlying subsoils.

5.74. The FCA and DS has therefore demonstrated that the Proposed Development will not increase flood risk away from the Site during the construction, operation and decommissioning phases. The Proposed Development is therefore considered to be acceptable in planning policy terms.

Glint and Glare

5.75. The application is accompanied by a Glint and Glare Assessment (see Chapter 7 of Volume 2) which considers the potential impacts of the Proposed Development on ground-based receptors such as roads, rail and residential dwellings as well as aviation assets.

5.76. Although there may be small amounts of glint and glare from the metal structures associated with the solar farm, the main source of glint and glare will be from the panels themselves. Glint can be produced as a reflection of the sun from the surface of the solar PV panel and Glare, which is significantly less intense in comparison to glint, can be described as a continuous source of bright light, relative to diffused lighting, i.e. is not a direct reflection of the sun, but a reflection of the sky around the sun.

5.77. A 1km survey area around the Site is considered adequate for the assessment of ground-based receptors, whilst a 30km study area is chosen for aviation receptors. Within 1km of the Site, there are 151 identified residential receptors, including eight residential areas, 61 road receptors, five rail receptors and 13 byway receptors which were considered. As per the methodology section, where there are a number of residential receptors within close proximity, a representative dwelling or dwellings is/are chosen for full assessment as the impacts will not vary to any significant degree. Where small groups of receptors have been evident, the receptors on either end of the group have been assessed in detail. 86 residential receptors, including two residential areas, 36 road receptors and 11 byway receptors were dismissed as they are located within the no reflection zones or areas of non-visibility. Eight aerodromes are located within the 30km study area, none of which required a detailed assessment due to the Proposed Development falling outside their respective safeguarding buffer zones.

5.78. The solar panels will face south and will be inclined at an angle of between 5 and 25 degrees. The maximum above ground level height of the panels is 3m and points at the top of the panels are used to determine the potential for glint and glare generation.

5.79. Geometric analysis was conducted at 65 individual residential receptors, including six residential areas, 25 road receptors, five rail receptors and two byway receptors.

5.80. The assessment concludes that:

- Solar reflections are possible at seven of the 65 residential receptors assessed within the 1km study area. The initial bald-earth scenario identified potential impacts as High at two receptors, Low at five receptors, including one residential area, and None at the remaining 58 receptors, including five residential areas. Upon reviewing the actual visibility of the receptor, glint and glare impacts remain High at one receptor and reduce to None at 64 receptors. Once mitigation measures were considered, glint and glare impacts reduce to None at all receptors. The effects from the Proposed Development are therefore None.

- Solar reflections are possible at 22 of the 25 road receptors assessed within the 1km study area. The initial bald-earth scenario identified potential impacts as **High** at six receptors, **Low** at 16 receptors and **None** at the remaining three receptors. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to **Low** at two receptors and **None** at all remaining receptors. Once mitigation measures were considered all impacts reduce to **None** at all receptors. The effects from the Proposed Development are therefore **None**.

- Solar reflections are possible at all the rail receptors assessed within the 1km study area. The initial bald-earth scenario identified potential impacts as **Low** at five receptors. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to **None** at all receptors. The effects from the Proposed Development are therefore **None**.

- Solar reflections are possible at all the byway receptors assessed within the 1km study area. The initial bald-earth scenario identified potential impacts as **Low** at two receptors. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce **None** at all receptors. The effects from the Proposed Development are therefore **None**.

5.81. Mitigation is required to ensure the **High** impact views from Residential Receptor 12 into the Proposed Development are screened, and mitigation is recommended to screen the **Low** impact views from Road Receptors 23 and 24. This includes native hedgerows/woodland to be planted/infilled along the eastern boundaries of Fields 32 and 34, along the northeast boundary of Fields 4, 7 and 11 and along the northern boundary of Fields 12, 13 and 14 and maintained to a height of at least 3m.

5.82. The effects of glint and glare and their impact on local receptors has been analysed in detail and the impact on all receptors is predicted to be **no impacts** upon residential, road, rail and byway receptors once mitigation has been considered. Residual effects on residential, road, rail and byway receptors is **None**. Therefore, the effects are **None**.

Noise

5.83. This application is accompanied by a Noise Impact Assessment (see **Chapter 8** of **Volume 2**) which assess the potential noise impacts of the Proposed Development during construction, operation and decommissioning.

5.84. A simulation of noise associated with the Proposed Development was produced using SoundPlan modelling software to predict noise levels for the purpose of undertaking an ISO9613-2 assessment. Source noise levels were modelled based on a candidate noise source.

5.85. in noise level for the baseline will be barely perceptible at the receptor location. The solar panels themselves do not generate noise. The main noise source associated with the Proposed Solar Farm will be the inverters located around the site.

5.86. An assessment of the acoustic impact of the Proposed Development was undertaken in accordance with BS 4142: 2014+A1:2019. The results showed only **Negligible impacts** at all receptors during the day time and night time periods within the study area are anticipated. **A Negligible impact** in relation to noise does not constitute a significant effect as the impact rating is **Minor**. A **Negligible impact** being a rating level at a receptor below background noise levels. This change

5.87. In addition to this, the levels at each receptor are below the Night Noise Guideline value of 40dB set out in the WHO Night-time Guidelines. This is the level recommended for the primary prevention of subclinical adverse health effects related to night noise in the population.

5.88. The Proposed Development is therefore in line with the policies contained within the Rhondda Cynon Taf Local Development Plan 2006 - 2021.

Cultural Heritage and Archaeology

5.89. This application is accompanied by a Cultural heritage and Archaeology Chapter (see **Chapter 10** of **Volume 2**) which identifies and evaluates the potential direct and indirect effects of the Proposed Development on archaeological and built heritage resources during construction, operation and decommissioning.

5.90. The desk-based assessment, site walkover survey and geophysical survey of the Site indicated that the potential of the Proposed Development to directly impact archaeological remains of significance is low, with such impacts expected to be limited to the post-medieval agricultural and quarrying usage of the fields, primarily former field boundaries, trackways and cultivation remains. Nonetheless, as with all greenfield land within a general area of archaeological potential, there is a small chance that significant sub-surface archaeology is present within the Site that has not been detected by the various surveys and analyses. In addition, while no remains associated with the adjacent scheduled Cross Ridge Dyke & Earthwork on Cefn Eglwysilan (NA11) were identified to continue into the Site, this possibility of surviving remains within Field 13 or within the boundary between Fields 13 and 14 cannot be entirely dismissed at this point.

5.91. The implementation of an appropriate archaeological Written Scheme of Investigation (WSI) for test trenching is recommended in the event that planning permission is granted, with the objective of verifying the results of the geophysical survey, further confirming the absence or presence of any hitherto-unknown sub-surface remains and informing the need for any

further appropriate investigative or mitigative measures. This approach allows for a programme of archaeological works which would ensure the identification and preservation *in-situ* and/or by record of any hitherto-unknown sub-surface remains within the Site.

5.92. Indirect effects resulting from the Proposed Development are expected to be **Moderate Adverse** upon the Cross Ridge Dyke & Earthwork on Cefn Eglwysilan (NA11) scheduled monument to the northeast and the listed buildings at the Church of St Ilan (NB18, NB31 & NB59 – 60) to the southeast, in the absence of any mitigation. However, additional planting and screening measures have been adopted within the Proposed Development design, as described within the Landscape Chapter of the EIA and the landscape and environmental management plan. With the growth of the additional proposed vegetative screening, indirect effects are expected to reduce slightly over time for certain heritage assets, with residual indirect effects upon NA11, NB18, NB31 & NB59 – 60 anticipated to be **Minor Adverse** overall, lasting for the operational duration of the proposal. All other indirect effects upon heritage assets are anticipated to be **Minor Adverse** or **Negligible** and do not require any specific mitigation measures.

5.93. With the implementation of the proposed and recommended mitigation measures, it is considered that the Proposed Development will not result in **substantial harm** or **significant effects** to archaeology and heritage resources.

Climate Change

5.94. This application is accompanied by a desk-based Climate Change Assessment (see **Chapter 11** of **Volume 2**) which identifies and assesses the potential impacts the Proposed Development would have on the climate throughout construction, operation and decommissioning.

5.95. It found that the Proposed Development will only have **Minor adverse effects** on the climate during the construction and decommissioning phases and that once operational it will have **Major Beneficial effects** on the climate by generating renewable energy. Furthermore, it found that the cumulative effects in combination with renewable energy developments within a 5km study area the Proposed development will have an overall long-term **Major Beneficial effect** at the operational stage on the climate which will outweigh the minor adverse effects identified for the construction and decommissioning phases.

5.96. This assessment also identified additional benefits of the Proposed Development including improved air quality and reduced water usage from energy production.

Mining

5.97. This application is accompanied by a Coal Mining Risk Assessment (See **Chapter 12 of Volume 2**) which provides an assessment of the potential hazards of the Proposed Development in relation to mining, given the rich history of mining that is synonymous with this area of Wales.

5.98. A review of information was undertaken to establish the current baseline conditions relating to mining and to identify significant features. Such features are taken forward for consideration of effects. The baseline assessment identified ground instability resulting from mineworking collapse and mineshaft collapse as significant matters, and they were therefore carried forward for a review of effects.

5.99. In relation to mineworking collapse during construction phase, the Coal Mining Risk Assessment found that:

"The construction of the solar panel and access tracks will change the ground loading regime which could affect shallow mineworkings, causing collapse and giving rise to ground instability; however given that no shallow mineworkings have been identified, this effect is considered unlikely to occur but cannot be ruled out completely due to the potential for unrecorded mineworkings. Localised areas of the solar panels and access track and cable corridors are located in / close to Development High Risk Areas defined by the Coal Authority; however, these appear to be associated with the outcrop of coal seam, rather than to workings themselves. No evidence has been found of mining of the seam in question. Consequently, the effect of the construction works on mineworkings is considered to be ***negligible*** *within the Site as there are no known or suspected shallow mineworkings within areas of proposed turbines, access tracks, cable corridors, or borrow pits. The magnitude of change is considered to be neutral on a low to medium sensitivity receptor, with a resulting effect of* ***negligible/minor*** *significance (not significant). No specific mitigation is considered necessary but periodic observational monitoring would help reduce risk, as set out in paragraph 12.57 below."*

5.100. In relation to mineshaft collapse during construction phase, the Coal Mining Risk Assessment found that:

"No mine entries have been identified in the area of the proposed solar panels, or on/in close proximity to the access tracks, cable routes or borrow pits. For that reason, the construction works are unlikely to induce ground instability from shaft collapse, with a ***neutral to slight*** *magnitude of change likely on a low sensitivity receptor. Whilst examination of the detailed records has found no evidence of mine entries, in any historic mining area there remains a residual risk in any historic mining area that unrecorded features could be present. For that reason, a* ***negligible to minor*** *(not significant) effect has been assigned. As above, no specific mitigation is considered necessary but periodic observational monitoring would help reduce risk, as set out in paragraph 12.57 below."*

5.101. Furthermore, the Coal mining Risk Assessment considers a low residual risk of ground instability disruption impacts during construction works. However, this is considered to be nominal based upon the mining features found underneath the Site.

5.102. During the operational phase the Coal Mining Risk Assessment found a residual risk of ground instability disruption impacts due to the fact that the presence of unrecorded mining features can never be completely ruled-out in any historic mining area. However, based upon our research the magnitude of change is likely to be moderate on a receptor of negligible

sensitivity; and this effect is considered to be **negligible to minor** (not significant) based upon the mining features recorded underneath the Site.

5.103. Moreover, the Coal mining Risk Assessment considers a low residual risk of ground instability disruption impacts during operation. However, this is considered to be nominal based upon the mining features found underneath the Site.

5.104. Despite no evidence of features such as mine entries or shallow mineworking's within the Site due to the possibility of unrecorded features a Toolbox Talk will be delivered to the site construction team by Engineering Geologists to highlight the features and typical manifestations that can occur. The matter shall be recorded on the construction phase Geotechnical Risk Register, within the Construction Environmental Management Plan (CEMP), and observational monitoring procedures of unrecorded mineworkings will be included to check for any evidence of potential mining related subsidence or features. In the event of any such features being discovered, appropriate investigation would be undertaken and stand-off zones and/ or remedial action would be determined, as stipulated in the CEMP.

6. BENEFITS OF THE PROPOSED DEVELOPMENT

Clean Energy Benefit

6.1. The most notable benefit of the Application Site is the support it will provide towards the Welsh Government's commitments to reduce emissions of greenhouse gas emissions to combat the effects of climate change.

6.2. The Proposed Development will have an export capacity of up to 39.9MWp. This would be sufficient to generate approximately 43,000MWh. Based on the most recent figures from the Department for Energy and Net Zero (DENZ)[10], average household energy consumption per year is 3,301kWh/yr, meaning that the Proposed Development would be sufficient to power approximately 12,000 homes. Consequently, during its operational lifespan (35 years), the Application Site has the potential to displace electricity generated from fossil fuels and consequently represents carbon savings and helps to tackle the climate emergency.

6.3. Using DENZ's most recent "*all fossil fuels*" emissions statistic of 437 tonnes of carbon dioxide per gigawatt hour (GWh) of electricity supplied in Table 5E of the *Digest of UK Energy Statistics*[11], the estimated prevention of emissions in CO_2 from the Proposed Development has been calculated both annually and for the estimated lifetime of the solar farm.

Table 1-2: Estimated prevention of emissions in tonnes of CO_2.

Estimated Prevention of Emissions in CO_2 (tonnes)	
Approximate Annual	Solar Farm Lifetime (35 years)
18,000	630,000

6.4. The development of the Proposed Development will mean a substantial reduction of approximately 18,000 tonnes of CO_2 emissions annually. Scaling this up to the CO_2 displaced over the 35-year lifetime of the Proposed Development this would be approximately 630,000 tonnes of CO_2 displaced. This represents a significant contribution to the legally binding national and international requirement and associated targets to increase renewable energy

[10] Department for Energy and Net Zero (Dec 2024) *Subnational Electricity and Gas Consumption Statistics*. Available at: https://assets.publishing.service.gov.uk/media/6763dd7ebe7b2c675de30820/Subnational-electricity-and-gas-consumption-summary-report-2023.pdf

[11] Department for Energy and Net Zero (July 2024) *Digest of UK Energy Statistics: Table 5.14 "Estimated carbon dioxide emissions from electricity supplied"*. Available at: https://www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes

generation and reduce CO2 emissions. Therefore, overall, the project will result in a **Major Beneficial** long-term effect.

6.5. As one of the cheapest forms of electricity generation (alongside solar), solar farms are considered to be a key component of the future energy mix. The deployment of renewable energy sources will need to increase significantly by 2030 to be on track to achieve net zero by 2050.

6.6. In addition, the operation of the Development could, based on the same assumptions, also displace other gases related to coal-fired electricity generation including those associated with acid rain such as sulphur dioxide (SO_2) and oxides of nitrogen (NO_X).

Facilitating Renewable Energy

6.7. As identified within this Statement, the Development will make a significant contribution to meeting international, national, and local policy objectives and legislative targets in relation to energy and climate change, as well as diversifying the energy mix, promoting security of supply and facilitating the transition to a low-carbon economy. Due to careful and robust site selection and design the Development will have no significant residual adverse impacts whilst achieving these benefits.

Ecological Enhancements, Biodiversity Net Gain and Amenity

6.8. The construction of the Proposed Development will occur over land which has been identified primarily as agricultural improved grassland and poor semi-improved grassland, of low ecological value which offers limited potential to support wildlife. With the introduction of a solar farm, the land would retain its pastoral function, with light grazing proposed (i.e. the site will be dual use; production of renewable energy and agricultural activities).

6.9. Moreover, the design of the solar farm ensures that sunlight can still reach the ground between and beneath the panels, allowing vegetation to thrive and supporting local ecosystems. The project incorporates biodiversity enhancements, including wildflower meadows, improved hedgerows, and dedicated habitat areas to support insects, birds, and mammals. These measures will help to maintain and enhance biodiversity, creating a net ecological benefit over time.

6.10. By implementing the proposed Landscape and Ecology Management Plan (**Figure 4.22 of Chapter 4: Volume 3**), in addition to the Biodiversity Management Plan (**Appendix 9B of Chapter 9: Volume 3**), there is anticipated to be a significant net-benefit for biodiversity at the Site.

6.11. The additional planting associated with the Proposed Development will result in additional landscape benefits as compared to the existing site and a more sympathetic development, once this mitigation planting has been fully established.

Landowner and Legacy Benefits

6.12. The Proposed Development will represent commercial diversification that would assist with the ongoing viability and stability of a rural business, as supported by both local and national policy. Given that solar power generation does not require a feedstock other than sunlight, the Proposed Development represents an opportunity to provide dual-use of the site by harvesting the sun's rays to generate electricity and continued low intensity agricultural use through alternative means such as livestock grazing.

6.13. Where possible, the Proposed Development retains and enhances existing landscape features and promote the use of traditional field hedges and diversity of native hedgerow species. Additionally, the Proposed Development will leave a positive legacy in the form of improved biodiversity and landscape value thanks to additional planting and infilling of hedgerows at the construction phase, the ecological enhancement measures and the ongoing sensitive site management for the duration of the Proposed Development's lifespan. Mitigation measures proposed include the planting of trees, the planting of hedgerows and the planting of wildflower seeding mix. These mitigation measures will greatly benefit local ecology.

6.14. This ecological and landscape enhancement is a benefit to be afforded further weight in favour of granting planning permission.

6.15. Following decommissioning, the site can be returned to agricultural use, having been safeguarded over the Proposed Developments operational period, with the benefit of retaining the enhanced landscape and biodiversity value from the matured mitigation planting.

Community Benefit

6.16. The Proposed Development will provide funding of up to £581,000 over the life of the project for distribution to the Pontypridd community and onward investment into local projects, group and initiatives.

6.17. Additionally, the project continues to welcome feedback on how it may provide further support to areas such as community groups, services and charities, as well as supporting local employment opportunities during the construction and into operation.

6.18. The relationships we forge with local suppliers help our projects to become successful and provide valuable economic benefits through inward investment. This ensures that, where possible, local people are employed during the construction and operation of the project.

6.19. The addition of renewable energy through projects like the Proposed Development help to strengthen energy security in Wales and contribute to long-term price stability for the Welsh people which is beneficial to the local community.

Socio-Economic Benefits

6.20. The Proposed Development will generate a range of direct economic benefits for Rhondda Cynon Taf and the surrounding area both in terms of its construction and operation, generating jobs for installation, maintenance, and its eventual decommissioning and remediation.

6.21. The scheme represents a significant financial investment as a range of support services will be required including haulage, on-site welfare facilities, refuse and recycling facilities, transport and local accommodation for construction workers.

Landscape and Ecological Enhancements

6.22. Landscape enhancement measures are proposed to integrate the Proposed Development into its surrounding as well as increase biodiversity at the site. Proposed measures include:

- Creation of 46.09ha of shade tolerant wildflower grassland
- Creation of 1.16ha of native species rich scrub
- Creation of 8.70ha of acid favouring wildflower grassland
- Creation of 2.65ha of Welsh species diverse wildflower grassland
- Enhancement of 1.41km of existing hedgerow habitat with native species rich planting
- Creation of 3.85km of native species rich hedgerow
- Creation of 0.53km of native species rich hedgerow and tree screening habitat
- 65m of Trees to be planted along the northern boundary of the Application Site.

Summary of Benefits

6.23. The need to foster and encourage economic development is given much weight in PPW and FW2040, especially in rural areas where this type of development is necessary.

6.24. In addition to this and with the ecological and landscape enhancement proposed, the Proposed Development will result in a net beneficial gain for biodiversity by way of habitat creation and enhancement measures centred around centred around a diverse range of wildflower grassland, tree planting and hedgerow planting which will result in a substantial net benefit for biodiversity within the Site.

6.25. As a result of the above, it is considered that the limited harm that may occur as a result of the Proposed Development is well outweighed by the many benefits associated with the scale of energy storage that will be provided.

7. CONCLUSION

7.1. The Proposed Development has been carefully designed to integrate seamlessly into the rural landscape while responding to the site's physical characteristics and environmental sensitivities. The layout and scale have been informed by a comprehensive suite of technical and environmental assessments, ensuring compliance with all relevant planning and legislative requirements. These assessments have guided the incorporation of appropriate mitigation measures and landscape enhancements, which serve to minimise any visual or environmental impacts while reinforcing the site's ecological value. The design approach prioritises the retention of existing vegetation, strategic planting to enhance screening, and biodiversity improvements, ensuring that the development complements its setting without undue intrusion.

7.2. A key consideration in the design process has been the balance between functionality and environmental responsibility. The solar farm and associated energy storage infrastructure have been sited to optimise energy generation while respecting the site's topography and surrounding land uses. The visual impact has been carefully managed through a considered layout that avoids dominance in the landscape, while the use of natural screening measures ensures that the development remains unobtrusive. The proposal aligns with national and local planning policies supporting renewable energy, and its contribution to decarbonisation targets is a compelling justification for its approval.

7.3. In terms of accessibility, the site benefits from an existing access arrangement that will be utilised and upgraded where necessary to accommodate construction and operational requirements without significant disruption to the local road network. The design ensures safe and efficient movement for construction, maintenance, and decommissioning activities, minimising any long-term impact on local transport infrastructure.

7.4. The proposal represents a sustainable form of development that delivers significant environmental, economic, and social benefits. It supports national renewable energy targets, contributes to local economic activity through job creation during its lifespan, and enhances biodiversity through targeted ecological interventions. Importantly, it demonstrates an appropriate and sensitive design response that ensures it sits comfortably within its rural setting. Given the careful consideration of site constraints and opportunities, the proposal is in accordance with planning policy and achieves a sustainable balance between renewable energy production and environmental stewardship. On this basis, planning permission should be granted.