



Candwr Solar Farm

Pre Application Consultation

Environmental Statement

Non-Technical Summary

2 July 2026





Document Management.

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1. Introduction

- 1.1. This Draft Non-Technical Summary ('NTS') summarises the findings of the Draft Environmental Statement ('ES') which addresses any likely significant environmental effects as a result of the Proposed Development on land at Court Farm, Ponthir, Monmouthshire (referred to as the 'Application Site' or 'Site').
- 1.2. The ES, and this NTS, have been prepared on behalf of Candwr Solar Farm Ltd ('the Applicant') and forms part of a suite of documents supporting the statutory-preapplication consultation for a Development of National Significance (DNS) application, under Section 62 (D) of the of the Planning (Wales) Act 20151 ('the Wales Act').
- 1.3. The Applicant is seeking planning permission to develop Candwr Solar Farm, a ground-mounted solar energy project (the 'Proposed Development'). The Proposed Development would generate up to 46 MW of electricity, enough to contribute significantly to local and national renewable energy targets. The project includes the installation and operation of solar panels, supporting equipment, access tracks, underground cables, and an on-site connection point to link the electricity into the local grid.
- 1.4. The Application Site would be located on land located approximately 5.2km north-east of Newport, 1km east of the village of Ponthir and 2.4km north of Caerleon. The Site covers approximately 131.86 hectares. The entire site lies within the administrative boundary of Monmouthshire County Council (MCC), Torfaen County Borough (TCB) Council and Newport City Council (NCC) – see **Figure 1 – Site Location plan** at the end of this document.
- 1.5. The proposed solar farm qualifies as a Development of National Significance (DNS) because it has the potential to generate between 10 and 350 megawatts of electricity. This means the project must follow a specific planning process set out in Welsh legislation, with the final decision made by the Welsh Ministers rather than the local council. The process is administered by Planning and Environment Decisions Wales (PEDW).
- 1.6. As part of the DNS process, the Applicant must prepare an ES, which this NTS summarises. This document reports the findings of an Environmental Impact Assessment (EIA), which is carried out before the planning application is submitted. The purpose of the EIA is to understand how the Proposed Development might affect the environment either positively or negatively and assess '*likely significant effects*,' by comparing current site conditions with what is expected during construction, operation and decommissioning. The rules that set out when an EIA is needed, what it must cover, and how the ES should be prepared are defined in the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. (the 'EIA Regulations'). Alongside the ES is a suite of other technical documents which consider other relevant matters, including the Planning Statement and Design and Access Statement.

- 1.7. This NTS provides a summary of the ES and the findings of the EIA in more accessible, non-technical language. Full details of the assessments can be found within the main ES document.

Availability and Comments on the Planning Application

- 1.8. The Draft NTS and ES is available to view free of charge on the project website (<https://candwrsolarfarm.co.uk>). Hard copies of the ES (including the main text and technical appendices) (£500) and the Non-Technical Summary (NTS) (£40) can be purchased, along with digital copies on USB (£15), with postage costs applying. Requests for copies should be made to Pegasus Group, quoting project reference (P24-2075).

Purpose of the Environmental Statement

- 1.9. The EIA process is an interdisciplinary and multistep procedure to ensure that environmental considerations are included in decisions regarding projects that may impact the environment. The ES comprises a series of studies which have been commissioned to address the environmental issues which are considered appropriate to the construction, operational and decommissioning phases of the Proposed Development. The NTS is provided to enable wider public broadcasting of the environmental effects of the Proposed Development (beneficial or adverse).

2. Scope of the Environmental Statement

Screening Direction

- 2.1. To determine if the planning application needed to be accompanied by an ES, the Applicant asked Planning and Environment Decisions Wales (PEDW) to issue a Screening Direction, which is the formal process for deciding if a project is likely to have significant environmental effects.
- 2.2. The request was submitted on 8th April 2025 to PEDW, acting on behalf of the Welsh Ministers and they confirmed on 12th June 2025 through their issued Screening Direction that the proposed solar farm does qualify as “EIA Development”. This means an Environmental Statement must be prepared and submitted as part of the planning application.

Scoping Direction

- 2.3. The aim of an EIA (the results are reported in the ES) is to assess the ‘*likely significant effects*’ of a project, in accordance with the EIA Regulations. When preparing the ES, the project team first considered which environmental topics should be assessed and could have the potential for ‘*likely significant effects*.’
- 2.4. The Applicant asked PEDW to provide a Scoping Direction. Although not a mandatory step, requesting a Scoping Direction allows the Applicant and the Welsh Government to agree the scope and methods to be used when preparing the ES.
- 2.5. The request was submitted on 30th September 2025, and an EIA Scoping Direction was adopted by the Welsh Government on 11th February 2026. All issues raised in the Scoping Direction have been considered during the EIA process and are discussed in further detail in the ES Chapters.
- 2.6. Accordingly, this ES has addressed the following environmental matters in separate ‘technical’ chapters:
 - Landscape and Visual;
 - Ecology;
 - Glint and Glare;
 - Agricultural Circumstances;
 - Water Environment;
 - Built Heritage;
 - Transport and Access; and
 - Air Quality.



- 2.7. All other disciplines are not considered to give rise to 'significant' effects as a result of the Proposed Development and full justification for those topics 'scoped out' as standalone ES chapters have been provided in the main ES. A suite of other technical documents outside this ES have however been submitted and will be considered by the Welsh Ministers in their determination of the application.
- 2.8. The ES has been coordinated and managed by Pegasus Group. Pegasus Group is one of the founding members of the ISEP Quality Mark. This is a mark of excellence in EIA co-ordination and management. All the ES chapters have been prepared by specialists in their respective fields so to ensure the completeness and quality of the ES in accordance with the EIA Regulations. Each one of these disciplines is discussed in turn within this NTS, summarising the work undertaken and the key findings. Further in-depth information is presented in the full ES.

3. Assessment Approach

- 3.1. The purpose of an Environmental Impact Assessment (EIA) is to identify, describe and assess the likely significant effects of a Proposed Development on the environment. This could be effects caused by impacts from the Proposed Development (e.g. increase in traffic) or existing conditions that could impact a Proposed Development (e.g. existing surface water flow paths and interaction with equipment). Assessments are made by comparing the current conditions of the Site (the baseline) with what is expected during construction, operation, and decommissioning.
- 3.2. '**Impact**' can be described as the action taken, and the '**effect**' is the following result of the action.
- 3.3. The findings of the EIA are presented in an Environmental Statement (ES). To prepare this, surveys and studies were carried out within and around the site to establish the baseline. The ES also describes a range of design measures built into the project from the outset to help avoid or reduce environmental impacts.
- 3.4. Whilst each environmental discipline has slightly different ways of determining '**significance of effect**,' generally it can be gained by taking the '**sensitivity**' of the resource/receptor and balancing that against the '**magnitude**' (resource/receptor being the 'item' in question for example a residential house or representative viewpoint). '**Significance**' is then gained from balancing these elements. Table 1 below shows an example of how this can be achieved. Significance is often measured as major, moderate, minor and neutral/negligible, with only certain levels of significance being considered 'significant' in EIA terms (generally major and sometimes moderate).

Table 1 – Significance Matrix

Magnitude	Sensitivity				
		High	Medium	Low	Negligible
	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor to Moderate	Negligible
	Low	Moderate	Minor to Moderate	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

- 3.5. '**Mitigation**' is something that is put in place to avoid, minimise or manage negative environmental effects, many of which are purposely incorporated into the design of the proposals and are referred to as 'mitigation by design' or 'integral/embedded mitigation.' 'Additional mitigation' measures may also be proposed.
- 3.6. '**Residual Impacts/Effects**' are those effects that remain after all mitigation has been incorporated. Of relevance to the proposals is the length of any effects i.e. temporary or permanent; short-term or long-term.
- 3.7. The ES also responds to the requirement in the EIA Regulations to assess the '**Cumulative**'/'**In Combination**' effects of the Proposed Development. Within EIA, cumulative effects are generally considered to arise from:

- 'Inter-project Cumulative Effects' – the combined effects of development schemes which may, on an individual basis be insignificant but, cumulatively, have significant effects. Three other existing or approved planning applications within 6km of the Site have been considered (as relevant for each ES technical chapter); and
- 'Intra-project Cumulative Effects' – the combined effect of individual effects on a single receptor where it is deemed potentially significant.

- 3.8. The full ES, which is summarised in this NTS, describes the current environmental conditions (known as the baseline); provides a description of the Proposed Development; and provides data to identify and assess any potential environmental effects which are likely to be of significance. Environmental effects have been evaluated with reference to definitive standards and legislation where available. Where it has not been possible to quantify effects, qualitative assessments have been carried out, based on available knowledge and professional judgement.
- 3.9. The iterative design process has sought to avoid significant environmental effects where possible by the inclusion of 'mitigation by design' or 'embedded mitigation measures. Where this has not been possible, additional mitigation measures have been suggested so to reduce likely effects as far as possible. Residual effects are then concluded.
- 3.10. The EIA is completed before the DNS application is submitted to ensure all potential effects are understood and properly considered.
- 3.11. Assessments are based on the realistic worst-case project parameters and current known information. Surrounding land uses are assumed to remain as existing unless already consented. All design, construction, and operation will comply with relevant legislation. Where uncertainties exist, they are identified in the technical chapters, and mitigation is assumed to be secured by conditions/obligations as required.

4. Application Site and Context

Site Description

- 4.1. The Application Site is located at Court Farm, near Ponthir in Monmouthshire. It covers an area of approximately 131.62 hectares, which includes land required for underground electricity cables connecting different parts of the Proposed Development.
- 4.2. The Site is made up of sixteen separate areas of farmland (referred to as 'Land Parcels') that are spread across three local authority areas: Monmouthshire County Council, Torfaen County Borough Council, and Newport City Council. It is situated in a rural area, approximately 5 km north-east of Newport, 1 km east of Ponthir, and around 2.5 km north of Caerleon.
- 4.3. The land is currently used for agriculture, with a mix of fields used for growing crops and grazing livestock. These fields are typically enclosed by hedgerows, trees and occasional small woodland areas, which are characteristic of the local landscape. The surrounding countryside is gently rolling, with a series of ridges and valleys. The Site itself includes areas of higher ground and south-facing slopes, which are typical of the wider landscape in this part of Monmouthshire.
- 4.4. The Site is located immediately adjacent to the Dŵr Cymru Welsh Water Court Farm Treatment Works, an existing water infrastructure facility. The Proposed Development would supply renewable energy directly to this facility through a private connection. Any additional electricity generated would be exported to the wider electricity network via an existing overhead power line connection and subsequently 'sleeved' to Dŵr Cymru Welsh Water sites across Wales.
- 4.5. Some sections of local roads are included within the Site boundary, as these will be used to route underground cables between different parts of the Proposed Development. These are existing roads and would not be new transport routes.
- 4.6. Across the Site, there are a number of existing natural and man-made features, including:
 - Public footpaths, which are used by local residents and visitors for walking and recreation;
 - Small streams, ditches and drainage channels, particularly in lower-lying areas;
 - Existing infrastructure, such as overhead power lines and underground pipelines (including water and gas);
 - Nearby water treatment facilities and reservoirs associated with Dŵr Cymru Welsh Water Court Farm Treatment Works.
- 4.7. In terms of environmental context, most of the Site is located in areas with a low risk of flooding, although small sections located close to watercourses may have a higher level

of flood risk. There are no nationally designated environmental sites within the Site itself, although there are features nearby that are valued for their landscape, ecological or historical importance. These include areas of woodland, some of which are classified as Ancient Woodland, as well as several listed buildings and heritage features in the wider area.

- 4.8. Parts of the Site fall within or close to locally designated Torfaen Special Landscape Area, reflecting the value of the wider countryside. However, this is not a national designation and does not prevent development, although it is taken into account in the design and assessment of the scheme.
- 4.9. Overall, the Application Site is typical of the surrounding rural area. It comprises working farmland with existing natural features such as hedgerows and streams, together with established infrastructure and nearby utility facilities. Its location next to existing electricity and water infrastructure makes it suitable for a development that would generate and supply renewable energy.
- 4.10. **Figure 2 – Environmental Designations Plan** of this NTS details illustratively the environmental opportunities and constraints within the Site and in the local context.

Environmental Context

- 4.11. Landscape and Visual
- 4.12. The Site is mainly made up of gently rolling farmland, including a mix of crops and pasture fields, with boundaries formed by hedgerows, trees and small areas of woodland. Several Public Rights of Way pass through or close to the Site.
- 4.13. The Site is located within two recognised National Landscape Character Areas (Central Monmouthshire and Cardiff, Barry and Newport). Parts of the Site also fall within a locally designated Special Landscape Area (Torfaen), although this is not a statutory designation.
- 4.14. Views of the Site vary due to the rolling landform and existing vegetation, which can either screen or allow views of the area. People who may experience views include walkers using Public Rights of Way, road users and nearby residents.
- 4.15. Understanding of the landscape and views has been based on both desk studies and site visits carried out in 2025 and 2026. This included reviewing mapping, landscape studies and planning policy, along with on-site surveys and viewpoint photography.
- 4.16. Computer modelling has also been used to identify where the Proposed Development may be visible, taking account of landform, buildings and vegetation. These results have been checked against site observations. The assessment follows recognised guidance and combines technical data with professional judgement.
- 4.17. Further detail is provided in the full Landscape and Visual chapter of the ES.

Water Environment

- 4.18. The Site is mainly made up of farmland with gently sloping ground. It contains a network of small streams and drainage channels and lies within the wider catchment of the Afon Lwyd and Sor Brook.
- 4.19. Flood risk mapping shows that most of the Site is at a low risk of flooding, meaning that flooding is unlikely to occur. However, there are small areas near streams and low-lying ground where the risk of flooding is slightly higher.
- 4.20. The Site is not at risk from flooding from the sea, and overall, flood risk across the Site is considered to be low.
- 4.21. The assessment has been based on a range of existing information, including national flood maps, geological data, and site surveys. It has also looked at how water naturally flows across the Site.
- 4.22. The design of the Proposed Development has been developed to avoid areas with higher flood risk wherever possible. Measures to manage rainwater, known as sustainable drainage systems (SuDS), would be included to control runoff and ensure the development does not increase flood risk either on the Site or in surrounding areas.
- 4.23. Further details of the assessment are provided in the Water Environment chapter of the ES.

Cultural Heritage

- 4.24. The Site is located within a rural, agricultural landscape with few known archaeological remains. However, there is potential for undiscovered features beneath the ground, including remains from prehistoric, Roman and later periods. Part of the Site may follow the route of an historic Roman road (now known as Candwr Road).
- 4.25. There are no designated protected heritage sites within the Site itself. However, a number of important historic features are located nearby. Within approximately 3 km of the Site, these include several Scheduled Monuments (nationally important archaeological sites), such as Candwr Camp, which lies immediately next to part of the Site, as well as Penrhos Camp, Lodge Wood Camp and Cae Camp in the surrounding area.
- 4.26. There are also historic buildings nearby, including several Grade II listed buildings. The closest of these are the barn at Pen-Twyn Farm, Little Creiggydd, and Glansirhowy Farm, all of which contribute to the historic character of the area.
- 4.27. In addition, two historic parks and gardens are located within about 3 km of the Site: Llantarnam Abbey and Glen Usk. These are recognised for their historic and cultural value.
- 4.28. The assessment of heritage has been based on existing records, historic maps, aerial photographs and site surveys. It also considered how the Proposed Development may

be seen in relation to nearby heritage features, and whether it could affect how they are experienced within the landscape.

- 4.29. Further details of the heritage assessment and its findings are provided in the Built Heritage chapter of the ES.

Ecology and Biodiversity

- 4.30. The Site mainly consists of farmland used for grazing and crops, with features such as hedgerows, small woodland areas and watercourses. While most fields have relatively low ecological value, features like hedgerows and woodland provide more valuable habitats and support a range of protected and notable species.
- 4.31. There are no designated nature conservation sites within the Site itself. However, important sites nearby include the River Usk– designated a Special Area of Conservation (SAC) and Special Scientific Interest (SSSI) approximately 1.4 km away, which is protected for its wildlife, and the Severn Estuary SAC and Special Protection Area (SPA), located within the wider area, approximately 10km away.
- 4.32. There are five areas of Ancient Woodland within the wider study area. Two of these are partly within the Site, while the remaining three are directly next to it. Ancient woodland is defined as land that has been continuously wooded since at least 1600 AD, making it a valuable habitat.
- 4.33. The Site forms part of a wider network of habitats, with ecological links to nearby rivers such as the Afon Lwyd and the River Usk.
- 4.34. Information on habitats and species has been gathered through both desk-based studies and on-site surveys carried out between 2023 and 2025, with updates in 2026. Surveys included habitat mapping, bird surveys, bat surveys, and checks for protected species, carried out at appropriate times of year in line with best practice guidance.
- 4.35. Further details of the ecological assessment and its findings are provided in the Ecology chapter of the ES.

Ground Conditions

- 4.36. The Site is mainly made up of undeveloped farmland and there are no known significant sources of contamination. Any potential contamination is expected to be small and localised, for example around farm access tracks or entrances.
- 4.37. The ground beneath the Site is made up of natural soils over layers of mudstone and sandstone rock. In some areas, there are also underground water-bearing layers (known as aquifers). The Site is not located in an area identified for safeguarding minerals, although much of it is within an area where naturally occurring radon gas may be present, which is common in parts of the UK.

- 4.38. The understanding of ground conditions has been based on a review of existing information, including maps, environmental records and geological data, along with a site walkover survey.
- 4.39. The assessment has considered whether there are any potential risks to people, water or the environment. Overall, the Site is considered to have low risk in terms of contamination, with no significant constraints identified at this stage.

Further details are available in the Phase 1 Geo-Environmental Desk Study, which forms part of the supporting application documents outside of the ES.

Agricultural Land

- 4.40. The Site is made up of farmland of mixed quality, which is typical of the surrounding rural area. Some parts of the Site are classified as higher quality farmland, while other areas are of lower quality.
- 4.41. Advice from the Welsh Government indicates that some areas of the Site (particularly Land Parcels 1–5) are not considered high-quality “Best and Most Versatile” (BMV) agricultural land, mainly due to factors such as slope. The Agricultural Land Classification Survey (Appendix 8.1 of the ES) identifies 23.2 ha BMV land and 97.1 ha of non-BMV land within the Site. However, a smaller proportion of both BMV and non-BMV land is proposed to be developed.
- 4.42. The quality of the land across the Site is influenced by a number of natural factors, including soil type, weather conditions and the shape of the land. In particular, soil wetness is a key factor that can limit how the land is used for farming, along with other localised issues such as drainage, soil depth and gradient.
- 4.43. To understand these conditions, detailed field surveys were carried out, including soil sampling and testing. This information was combined with existing data on soils, geology and climate to assess how suitable the land is for agricultural use.
- 4.44. Further details on agricultural land assessment and its findings are provided in the Agricultural Circumstances chapter of the ES.

Air Quality

- 4.45. The Site is not located within an Air Quality Management Area (AQMA). An AQMA is a defined geographic area identified by a local authority where air pollution levels are above, or are likely to exceed, national air quality standards (objectives) set to protect human health and the environment. The nearest such area is at Caerleon High Street, approximately 1.6 km to the south, which has been identified for nitrogen dioxide.
- 4.46. Overall, air quality in the local area is good, with pollution levels well below national standards. Air quality is mainly influenced by traffic on local roads, with few other sources.

- 4.47. The baseline of air quality conditions has been established using existing monitoring data, national datasets and published reports, alongside traffic data for the area.
- 4.48. A detailed modelling assessment was not required, as the expected changes in traffic are small and below recognised thresholds. Instead, a screening-based approach has been used, supported by a qualitative assessment. Potential dust effects during construction have also been assessed using a risk-based method.

Further details are provided in the full Air Quality chapter of the ES.

Noise

- 4.49. The existing noise environment around the Site is quiet and rural, with most noise coming from local traffic and normal countryside activities.
- 4.50. To understand current conditions, noise monitoring was carried out at a number of locations near nearby homes. This involved unattended equipment recording sound levels over several days to identify typical noise levels at different times.
- 4.51. The potential noise from the Proposed Development has been assessed using standard computer modelling. This takes into account the location of equipment on the Site, the surrounding land, and assumes a worst-case scenario where all equipment is operating at the same time.
- 4.52. The results of this assessment have been compared with existing background noise levels to understand how noticeable the development may be for nearby residents.
- 4.53. More detailed information about how the assessment was carried out, and the findings, is provided in the Noise Assessment appended to the ES. The Scoping Direction from PEDW scoped out a standalone Noise ES chapter.

Transport

- 4.54. The Site is located around 3 km north of Junction 25 of the M4 and is served by a mainly rural road network, including local lanes, the B4236 and the A4042. Public Rights of Way are also present in the surrounding area. Current traffic levels and HGV movements are typical of a rural area, and there are no known road safety issues based on recorded accident data.
- 4.55. Baseline conditions have been established using traffic surveys, existing data from the highway authority, and accident records.
- 4.56. The assessment considers how traffic generated by the Proposed Development could change existing conditions. Rather than using detailed modelling, a standard guideline-based approach has been used, comparing expected increases in traffic against recognised thresholds to identify potential effects.
- 4.57. Further details are provided in the full Transport and Access chapter of the ES.

Glint and Glare

- 4.58. Solar panels can reflect sunlight, which may result in glint and glare effects. These effects would occur during the operation of the Proposed Development but would stop once the panels are removed and can be reduced through measures such as planting or retaining vegetation.
- 4.59. Potential effects have been considered for nearby roads and properties within 1 km of the Site, including sections of the B4236 and Usk Road, and 222 homes. Effects on aviation have also been assessed within 10 km of the Site, including Park Farm Airfield and Grange Hospital Helipad.
- 4.60. Existing features such as vegetation and the shape of the land already help to limit visibility of reflections and reduce potential effects.
- 4.61. The assessment has used mapping, aerial images and terrain data to understand the surrounding area, alongside established industry guidance. Computer modelling has been used to predict how sunlight may reflect from the panels, including a specific assessment for aviation.
- 4.62. Further detail is provided in the full Glint and Glare chapter of the ES

5. Proposed Development

- 5.1.1. The Proposed Development comprises a Development of National Significance application for:

“An installation and operation of ground mounted solar photovoltaic arrays with all associated works, equipment and necessary infrastructure”

- 5.1.2. The Proposed Development has an intended design generation capacity of up to is approximately 46 mega-watts alternating current (MWac) and is expected to generate enough electricity to supply up to approximately 18,000 households annually, contributing to cutting carbon emission reductions and the transition to renewable energy.
- 5.1.3. The primary purpose of the development is to provide renewable energy directly to Dŵr Cymru Welsh Water’s Court Farm Treatment Works via a private wire connection, with any addition electricity exported to the National Grid and subsequently ‘sleeved’ to Dŵr Cymru Welsh Water sites across Wales. The project would contribute to reducing carbon emissions and supporting national targets for renewable energy and climate change.
- 5.1.4. The design of the Proposed Development has been refined throughout the EIA process. It is recognised that parts of the Proposed Development design and construction methodology, as presented, may be subject to further refinement and optimisation prior to and during construction. This is very pertinent to solar development due to the rapid pace of change in technology. For example, as technology advances, it is possible that solar PV panels could become more efficient, which could result in a potential reduction in total panel area required to deliver the same amount of generation. This in turn could require the micro-siting of panels and the associated equipment and infrastructure to reflect such changes, i.e., the final alignments of cabling and the number and location of solar panels, MV stations and transformers.
- 5.1.5. This EIA has employed a maximum (or minimum where appropriate) design scenario. A ‘worst case’ scenario approach to the environmental impact of a Proposed Development and allows for a broad definition of the project to be framed within a number of set parameters. The submitted site layout is therefore indicative as the detailed layout and phasing of construction will be agreed with the Local Planning Authority (LPA) by way of planning condition following grant of planning permission. The final detailed layout will demonstrate how the final ‘as-build’ design remains within the parameters of the design principles considered by this ES.
- 5.1.6. Key components of the Proposed Development include:
- Solar photovoltaic (“PV”) fixed panels mounted on a simple metal framework,

- Onsite supporting equipment including string inverters, transformers and MV Stations,
- Onsite 132 kilovolt (“kV”) substation compounds including transformers, switchgear, circuit breakers, control equipment buildings, control functions, material storage, parking, as well as wider monitoring and maintenance equipment,
- 132kV overhead wires coming from the existing electricity pylon (owned by National Grid Electricity Distribution (“NGED”)) to the onsite 132kV substation,
- Underground cable connections to connect and transmit electricity from the solar PV panels to the National Grid Electricity Distribution point of connection at the Dŵr Cymru Court Farm Water Treatment Works,
- Perimeter fencing (deer proof) and access gates around the perimeter of the Site,
- Inward facing infrared CCTV system,
- Associated internal access tracks within the Site,
- Relevant communications and monitoring equipment,
- Temporary construction compounds during the construction phase,
- Environmental mitigation and enhancement measures, including landscaping, habitat management and biodiversity enhancement,
- New permissive path walkways,
- Associated infrastructure including parking, lighting, drainage infrastructure, storage containers, earthworks, culverts, surface water management, maintenance and welfare facilities, security cabins and any other works identified as necessary to enable the development, and
- Creation of new or improvement of existing vehicular accesses for the construction, operational and decommissioning phases of the Proposed Development, predominantly utilising existing farm access points.

5.1.7. The Proposed Development site layout is shown on **Figure 3 –Indicative Site Layout**, with mitigation measures (landscape, ecology and drainage) detailed on **Figure 4 – Indicative Landscape Strategy** at the end of this document.

5.1.8. The total developable area of the Site (including solar pV panelled areas, onsite 132kV substation compounds and access tracks) is 47.58ha. This equates to approximately 36.1% of the Application Site area.

- 5.1.9. Technical drawings of physical components of the Proposed Development accompany the ES.

Solar Panels and Framework

- 5.1.10. Solar panels would be installed across several land parcels. These panels convert sunlight into electricity. They would be mounted at a low height (up to 3 metres), fixed south-facing at 15–30° tilt and arranged in rows following the land's natural shape. Posts will be driven into the ground (ballast or pads may be used where needed). The land beneath and between the panels would remain undeveloped and would be used for biodiversity enhancement, grassland management, and potential seasonal sheep grazing.

String Inverters, MV Stations and Transformers

- 5.1.11. The solar panels generate electricity as direct current (DC), which is converted into alternating current (AC) by string inverters located alongside the panel rows. These inverters are small, distributed units that connect individual groups of panels, improving efficiency and resilience.
- 5.1.12. Electricity is then transferred to medium voltage (MV) stations and transformers, which increase the voltage so it can be transmitted efficiently to the onsite substation and onward to the electricity network.
- 5.1.13. The MV Stations and Transformers are housed in compact units distributed across the Site. The exact specifications may vary and will be finalised during detailed design, but all equipment will remain within the parameters assessed in the ES.

Electrical Cabling

- 5.1.14. Electrical cabling will connect solar panels to the wider electricity network. Generally, underground cabling is used across the Site to connect solar panels, inverters, transformers and the onsite 132kv substation. Cabling between solar panels and inverters is routed along the panel frames and then taken underground. This will help to reduce visual effects.
- 5.1.15. Installation of cabling will be via shallow trenches, backfilled to restore original ground levels.
- 5.1.16. The routing of the cabling has been designed to follow existing field boundaries where it is possible to minimise impacts on hedgerows (with some loss assumed as a worst-case scenario).
- 5.1.17. Short sections of cabling will be installed within the public highway to link different land parcels and connect to the onsite 132kv substation.
- 5.1.18. A Soil Management Plan will be followed during installation to protect soil quality.

- 5.1.19. At the end of the project, deeper cabling of 1m+ may be left in place to avoid unnecessary ground disturbance.

Onsite 132kv Substation

- 5.1.20. An onsite 132kv electrical substation will be constructed on land adjacent to the existing Dŵr Cymru Welsh Water Court Farm Treatment Works to connect the solar farm to the wider electricity network. The onsite 132kv substation will increase (or “step up”) the voltage of the electricity generated so it can be efficiently transferred to the grid and supplied to Welsh Water.
- 5.1.21. The onsite 132kv substation will occupy a defined area and include several fenced compounds containing electrical equipment. It will be secured with fencing and access gates, with limited lighting used only when necessary.
- 5.1.22. Where possible, the ground surface within the substation compounds will remain permeable to allow drainage. The final design will be agreed with the electricity network operator, but it will remain within the parameters assessed in the ES.
- 5.1.23. The Point of Connection (PoC) is where the solar farm will connect into the existing 132kV overhead electricity network where the onsite 132kv substation is positioned.

Crossings, Fencing and Security

- 5.1.24. Where access tracks cross watercourses, structures such as culverts will be installed to maintain water flow.
- 5.1.25. The final design and locations of these crossings will be confirmed at the detailed design stage and agreed with the relevant Local Planning Authority.
- 5.1.26. The Site will be enclosed by perimeter fencing (typically stock/deer fencing around 2.4m high). Fencing will be designed to allow small animals to pass through, while controlling access to the Site. The layout of fencing takes account of existing utilities and ensures continued access where required.
- 5.1.27. The Site will be secured using gated access points and CCTV cameras mounted on poles around the perimeter. Cameras will face inward to monitor the Site and avoid overlooking surrounding land. There will be no continuous lighting, with lighting only used where required for key infrastructure such as the substation.

Temporary Construction Compounds

- 5.1.28. Temporary construction compounds will be established at up to three locations across the Site to support construction activities.
- 5.1.29. A primary compound located in land parcel 13 will act as the main delivery and storage area, where materials are received and then distributed across the Site. Secondary compounds in land parcels 10 and 1 will provide smaller, localised areas for storage and operations closer to different land parcels.

- 5.1.30. These compounds will include facilities such as:
- Temporary offices and welfare units
 - Storage areas and secure compounds
 - Parking and turning areas for vehicles
 - Hardstanding and wheel-washing facilities
- 5.2. They will be surfaced with temporary materials designed to allow water to drain naturally.
- 5.3. Once construction is complete, all temporary compounds will be removed and the land reinstated and typically returned to grassland, with use for then as part of the solar panel arrays or for biodiversity enhancement.

Access

- 5.3.1. The Site would be accessed using a combination of existing farm access points (with some upgrades), and a small number of new access points.
- 5.3.2. During construction, the Site will be accessed primarily via a new main access point from the B4236, designed to accommodate large vehicles, including HGVs. This main access will connect to an internal haul road and to a primary temporary construction compound, where materials will be delivered and redistributed across the Site. Secondary access points will be used for smaller vehicles and internal movement only.
- 5.3.3. All HGV traffic will be routed via the strategic road network (M4/A4042) to minimise use of local rural lanes. Construction traffic levels will be managed through a Construction Traffic Management Plan to ensure safe operation of the highway network.
- 5.3.4. During operation, access will be required only occasionally for maintenance. All established access points will be retained, providing flexible entry across the Site. Traffic levels will be very low, typically involving infrequent visits by light vehicles such as vans or 4x4s.
- 5.3.5. Internal tracks of permeable crushed stone would be created to allow construction and maintenance vehicles to move around the Site utilising existing farm routes and gates where possible to minimise hedgerow loss. Internal tracks will allow vehicles to safely enter, circulate and exit the Site without reversing onto public roads.
- 5.3.6. Existing Public Rights of Way would remain open during both construction and operation. Additional permissive paths are proposed to improve access for walkers.

Drainage

- 5.3.7. A Flood Consequence Assessment and Surface Water Drainage Strategy (Appendix 9.1 of the ES) has been developed to manage surface water and ensure the Proposed Development does not increase flood risk during its lifetime.
- 5.3.8. Key features of the drainage approach include:
- Locating most infrastructure in areas of lowest flood risk
 - Using permeable surfaces (e.g., internal access tracks) to reduce runoff
 - Maintaining natural water flows by elevating panels above ground
 - Keeping a buffer zone alongside watercourses to protect natural drainage and allow maintenance
 - Incorporating a site-wide sustainable drainage system (SuDS), including features such as swales and attenuation areas
- 5.3.9. The design also includes improvements compared to the current agricultural use, as grassland beneath the panels is expected to increase infiltration and reduce soil compaction, leading to better long-term water management.
- 5.3.10. Overall, the drainage strategy ensures the Proposed Development will be safe from flooding for its 40-year life, will not increase flood risk elsewhere, and will provide additional environmental benefits.

Biodiversity and Landscaping

- 5.3.11. The Proposed Development includes a range of measures to protect, enhance and manage habitats across the Site, delivering overall biodiversity benefits. Key features include:
- Retention and protection of existing habitats, such as hedgerows, trees, and woodland, with appropriate buffer zones
 - New planting, including native hedgerows, trees, woodland, and orchard areas to improve landscape character and screening
 - Creation of wildflower meadows, grassland, and wetland areas to enhance habitat diversity
 - Measures to support wildlife, including protection for species such as bats, birds, and badgers
- 5.3.12. The design has been developed to minimise impacts on higher-value habitats and make use of lower-value agricultural land where possible.
- 5.3.13. A Landscape and Ecological Management Plan (LEMP) will guide the long-term management of habitats, ensuring they are maintained and enhanced over the lifetime of the Proposed Development.

- 5.3.14. Overall, the scheme is expected to improve biodiversity by strengthening habitat connectivity and creating a more varied and ecologically valuable landscape.

Construction Activities

- 5.3.15. Construction of the Proposed Development is expected to begin in 2029 and last approximately 12–18 months. The programme includes site preparation, installation of solar infrastructure, testing, and reinstatement works. Key construction activities will include:
- Establishing site access and temporary compounds
 - Installing solar panels, electrical equipment, and the onsite substation
 - Laying underground cabling and connecting to the electricity network
 - Constructing internal access tracks and watercourse crossings
 - Completing reinstatement works, including habitat creation
- 5.3.16. Many of these activities will occur at the same time across different parts of the Site.
- 5.3.17. Construction will be carefully managed to reduce environmental effects through a Construction Environmental Management Plan (CEMP). This will include controls on working practices, environmental monitoring, and measures to manage impacts such as noise, dust, traffic, and pollution.
- 5.3.18. Working hours are expected to be limited to standard daytime hours, with deliveries scheduled outside peak traffic periods. Construction will involve typical plant and machinery, with a peak workforce of around 150 workers on-site. Overall, a worst-case approach has been used in the assessment to ensure all potential effects are appropriately considered.
- 5.3.19. Construction traffic will be managed to minimise impacts on the local road network. Vehicles, including HGVs, will access the Site primarily via the main access from the B4236, with routing from the strategic road network (M4 and A4042) to avoid smaller rural roads.
- 5.3.20. Traffic levels are expected to be relatively low, with typically up to around two HGV deliveries per day during peak periods, alongside other vehicle movements such as construction staff and smaller service vehicles.
- 5.3.21. Measures such as shared transport (e.g., minibuses for workers) will be used to reduce the number of vehicle trips.
- 5.3.22. A Construction Traffic Management Plan (CTMP) will be implemented to control routing, delivery times, and vehicle movements, ensuring that construction traffic does not adversely affect highway safety or the operation of the surrounding road network.

- 5.3.23. Waste will be minimised, segregated, and sent to authorised facilities with full legal compliance (e.g., Duty of Care, Landfill and Hazardous Waste Regulations). No on-site burning will occur. Trees retained on site will be protected to BS 5837:2012.

Operational Phase

- 5.3.24. The Proposed Development will operate for a design life of up to 40 years, with minimal on-site activity limited to maintenance, monitoring, equipment replacement and landscape and ecological management. There will be no permanent staff on-site, with access required only periodically for maintenance purposes. Operational areas will be secured by fencing and CCTV, and land beneath and between panels will support biodiversity enhancements and potential grazing.

Decommissioning Phase

- 5.3.25. At the end of its operational life, the scheme will be decommissioned over a period of up to 12 months. This will involve the removal of all above-ground infrastructure and shallow cabling, with deeper cabling potentially left in situ to minimise ground disturbance. The onsite 132KV substation will remain as part of the wider electricity network.
- 5.3.26. The Site is expected to be restored to agricultural use following decommissioning, with established vegetation such as hedgerows and trees retained where appropriate. Decommissioned materials will be reused, recycled, or disposed of in accordance with good practice and relevant regulations.

Consideration of Alternatives

- 5.3.27. The EIA Regulations require that the ES contain:
- 'a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'*
- 5.3.28. This includes alternatives in location, design, technology, size and scale, and the reasons for selecting the chosen option. These requirements ensure that realistic options are explored and that the final design can be clearly justified. The assessment considered four main types of alternatives.
- 5.3.29. First, the 'No Development' option was reviewed but rejected, as it would not contribute to renewable energy targets or carbon reduction commitments. The land would remain in agricultural use and none of the potential environmental or biodiversity benefits would be delivered, through additional planting and habitats created.
- 5.3.30. Next, Alternative Locations' were analysed. Land within a surrounding 10km area from the point of connection were assessed, focusing on factors such as proximity to the electricity network, environmental constraints, land availability, and suitability.



- 5.3.31. Three other potential sites were identified for initial assessment; however, these were not taken forward because they had greater environmental constraints or required more complex and potentially harmful connections to the electricity network.
- 5.3.32. The Application Site was identified as the most suitable due to its proximity to an existing grid connection, appropriate size, lower environmental constraints, and overall deliverability.
- 5.3.33. 'Alternative Designs' were considered. The layout of the solar farm has been refined through an ongoing design process. Changes have been made to avoid sensitive areas, reduce environmental impacts, and improve the overall design. This approach ensures that environmental considerations have been built into the design from the outset.
- 5.3.34. 'Alternative Technologies' were considered reviewing different solar technologies and equipment options. The development will use fixed solar panels and distributed string inverters, as these are more reliable, require less maintenance, and reduce potential impacts such as noise and visual intrusion compared to alternative options.
- 5.3.35. Through this process, the Proposed Development has been identified as the most suitable option, balancing the need for renewable energy with environmental and site-specific considerations.

6. Summary of Environmental Effects

- 6.1. The remainder of this NTS summarises the work undertaken for each 'technical' topic, under the headings of 'baseline', 'mitigation and enhancement' and 'conclusion and residual effects'. Further detailed information is presented in the full ES which should be referred to for the comprehensive assessments.

Landscape and Visual Amenity

Introduction

- 6.2. The Landscape and Visual Chapter of the ES sought to determine the effects upon the identified landscape character and visual receptors, and determine whether such effects would be significant. In line with best practice it considers the effects during the construction, operation, and decommissioning stages.
- 6.3. The chapter considered the Proposed Development in terms of its maximum parameters: the extent and height of the solar modules, substation elements, and fencing. The chapter also sets out the main policies and guidance relevant to landscape and visual matters based on the published guidance and relevant planning policies. The provided assessment is based on established best practice methodologies.

Baseline Conditions

- 6.4. The Site comprises predominantly rolling agricultural land, which includes a mix of arable crop fields and pasture. It is located to the east of Ponthir in a largely rural setting, although it is in close proximity to the urban areas of Newport and Cwmbran. The area is generally tranquil, although there is some influence from nearby roads and settlements.
- 6.5. The surrounding landscape is rural in character and is defined by a patchwork of fields enclosed by hedgerows, scattered trees and small areas of woodland. The landform is gently undulating, with rolling hills and valleys that create varying views across the area depending on topography and vegetation.
- 6.6. The land is currently used for farming, with a combination of arable and grazing uses typical of the surrounding countryside. Field boundaries are generally formed by mature hedgerows and trees, which provide enclosure and contribute positively to the character of the landscape. There are also small areas of woodland, including areas of Ancient Woodland, located within and adjacent to the Site.
- 6.7. The wider area includes a number of settlements, farmsteads and individual dwellings, reflecting a dispersed rural settlement pattern. There are some existing built and infrastructure elements within the landscape, including Dŵr Cymru Welsh Water Court Farm Treatment Works, Court Farm reservoir, overhead power lines and nearby roads.
- 6.8. There are several Public Rights of Way (PRoW) within and around the Site, providing opportunities for recreational access. Views of the Site vary depending on location, with

more open and long-distance views available from higher ground, and more enclosed views within valleys where vegetation and landform limit visibility.

- 6.9. The Site is not located within any nationally designated landscape, such as a National Park or National Landscape. However, part of the Site lies within locally designated 'Torfaen Special Landscape Area,' indicating its importance at a local level.

Mitigation and Enhancement

- 6.10. The Proposed Development has been designed to reduce potential impacts on the landscape as much as possible. This includes carefully positioning solar panels within existing field boundaries, avoiding sensitive features such as trees and residential properties, and making use of natural landform and vegetation to reduce visibility.
- 6.11. Additional mitigation is provided through new planting across the Site. This includes the creation of native woodland, hedgerows and individual hedgerow trees, as well as areas of wildflower meadow and grassland planting, which would be managed to improve biodiversity.. These measures are intended to help integrate the development into the surrounding landscape and reduce visual effects over time.
- 6.12. Existing important landscape features, such as mature hedgerows, trees and areas of Ancient Woodland, would be retained and protected as part of the scheme. Where vegetation removal is required, it is limited and is more than offset by the amount of new planting proposed.
- 6.13. The Proposed Development also includes improvements to the local PRoW network, creating new and enhanced permissive path routes that improve connectivity and recreational opportunities.
- 6.14. Overall, the mitigation and enhancement measures are designed not only to minimise adverse landscape and visual effects, but also to provide long-term improvements to habitat quality, vegetation cover and public access within the Site.

Conclusion & Residual Effects

- 6.15. Taking into account the mitigation set out above, the residual effects of the development have been assessed for all scoped-in receptors including landscape character, landscape elements, and visual receptors, across the construction, operational and decommissioning phases. Overall, effects on landscape character and landscape features are generally limited and the underlying character of the Site and the wider landscape would remain largely unchanged. Most existing features, such as hedgerows, trees and field patterns, would be retained.
- 6.16. During the construction and decommissioning phases, the assessment identifies temporary and short-term effects on all relevant receptors, primarily arising from construction activity, vehicle movements, and site works. These effects are localised and reversible. At the end of decommissioning, conditions would return to a baseline similar to the existing situation. **No significant residual effects** are predicted during the construction or decommissioning phases.

- 6.17. During the operational phase, the assessment considers effects at both Year 1 (immediately after construction) and Year 15 (when mitigation planting has matured). The assessment confirms that effects on landscape character and landscape features remain **not significant**. The solar arrays would largely sit within existing field boundaries and above existing ground levels, meaning that physical changes to the landscape would be limited and reversible. Although the land use would change in some areas from arable to grassland, this is not considered to adversely alter the underlying character of the Site. In some cases, this change is identified as having a minor beneficial effect, particularly in terms of biodiversity and ground cover. Over time, landscape mitigation planting would establish and strengthen existing field boundaries, helping the development to integrate into the surrounding landscape.
- 6.18. For visual receptors during the operational phase, **significant residual effects** are identified at a small number of locations close to, or within the Site, particularly affecting users of Public Rights of Way and nearby residents. At Year 15, mitigation planting would have matured and would provide additional screening in some areas. However, due to the rolling topography of the Site, the assessment concludes that screening would not fully remove visibility of the development at the closest viewpoints. These effects are localised, and the assessment shows that impacts reduce with distance, with the majority of visual receptors experiencing effects that are **not significant**.
- 6.19. In terms of cumulative effects, the assessment finds that when the Proposed Development is considered alongside other nearby schemes, **no significant cumulative landscape or visual effects** are predicted.
- 6.20. While the Proposed Development would result in some localised significant visual effects at close range, there are no significant effects on landscape character or landscape elements, and the proposals are considered acceptable in landscape and visual terms overall within the context of EIA.

Ecology

Introduction

- 6.21. The Ecology Chapter of the ES assesses the likely significant effects of the Proposed Development on ecological receptors, including habitats, designated sites and protected species. It considers how the development may affect ecological features and whether those effects would be significant. The assessment considers effects during the construction, operational and decommissioning phases of the development.
- 6.22. The assessment focuses on ecological features that are considered important and potentially affected, with other features scoped out where significant effects are not anticipated.
- 6.23. It has been carried out in accordance with relevant planning policy and best practice guidance, using established methods to evaluate the importance of ecological receptors and the magnitude of potential change, based on a combination of desk-based data and field surveys.

Baseline Conditions

- 6.24. The Site is mainly made up of agricultural fields used for grazing, with areas of woodland, hedgerows, and water features such as streams and ditches. These habitats are typical of the surrounding rural landscape and provide connections to nearby habitats.
- 6.25. There are no internationally or nationally designated ecological sites within the Site itself, but several important sites are located nearby, including the River Usk (SAC/SSSI) and Severn Estuary (SAC/SPA). Locally designated wildlife sites and areas of Ancient Woodland are also present close to the Site.
- 6.26. A range of habitats is present, including grassland, hedgerows, woodland and small water features. Most are common in the local area, although features such as woodland, hedgerows and watercourses are of higher ecological value and provide important wildlife corridors. A range of common grassland fungi are present, with surveys identifying no rare or notable floral or fungal species.
- 6.27. Surveys recorded a variety of plant and animal species typical of farmland. These include breeding birds such as skylark and other species associated with hedgerows and woodland. Wintering birds were recorded in low numbers. Bats use the site for foraging, particularly along field boundaries and watercourses, although no roosts were identified.
- 6.28. Other wildlife recorded or likely to be present includes badgers, otters (in nearby watercourses), and common mammals such as hedgehogs. No evidence was found for great crested newts, water voles, reptiles, or other protected species during surveys, although some habitats are suitable.

- 6.29. Overall, the Site supports a moderate level of biodiversity, largely reflecting its agricultural use, with ecological value focused around habitats such as hedgerows, woodland and watercourses.

Mitigation and Enhancement

- 6.30. The Proposed Development has been designed from the outset to avoid and minimise impacts on ecological features, with the layout retaining key habitats such as woodland, hedgerows and watercourses wherever possible. These features are recognised as the most ecologically valuable elements of the Site and will be protected within the design.
- 6.31. Where impacts cannot be fully avoided, a range of mitigation measures will be implemented. During construction, this will include the use of protective buffer zones around sensitive habitats and water features, as well as fencing and clearly defined working areas to prevent accidental encroachment. Works will be undertaken following best practice construction methods, including pollution prevention measures and careful soil management, to reduce the risk of damage to habitats and water quality.
- 6.32. To reduce disturbance to wildlife, sensitive timing of works will be applied where practicable, such as avoiding vegetation clearance during the bird breeding season. In addition, a watching brief or ecological supervision will be used where necessary to ensure that protected or notable species are safeguarded during key stages of construction. Precautionary measures will also be in place for species that may be present, such as bats, badgers and otters associated with nearby watercourses.
- 6.33. Alongside mitigation, the Proposed Development includes a range of ecological enhancement measures designed to improve biodiversity over the longer term. These will focus on strengthening existing habitat networks and creating new opportunities for wildlife. Measures include the enhancement and infilling of hedgerows, woodland planting and management, and improvements to grassland habitats to increase their ecological value. These actions will help to improve habitat connectivity across the Site and the surrounding landscape.
- 6.34. Additional features to support wildlife will also be incorporated where appropriate, helping to increase the suitability of the Site for species such as birds and bats.
- 6.35. The Site will be managed through a long-term ecological management strategy via a Landscape and Ecological Management Plan, which will guide the ongoing maintenance and enhancement of habitats throughout the operational life of the development. This approach will ensure that mitigation measures remain effective and that biodiversity benefits are secured over time.
- 6.36. Overall, the Proposed Development is expected to protect important ecological features, reduce potential impacts during construction and operation, and deliver measurable biodiversity enhancements over the lifetime of the scheme.

Conclusion & Residual Effects



- 6.37. Following the implementation of mitigation measures, the residual effects on ecology during all phases of the development are expected to be limited and, in some cases, beneficial.
- 6.38. During construction, some temporary disturbance to habitats and species may occur due to vegetation clearance, noise, and site activity. However, with the application of mitigation measures such as habitat retention, protective buffers, timing restrictions and good practice construction controls, residual effects are expected to be minor and **not significant** for most receptors.
- 6.39. During operation, the retention of key habitats and delivery of enhancement measures (including improved habitat management and connectivity) are expected to result in **neutral to beneficial , not significant residual effects** for many ecological receptors. Habitats such as hedgerows, woodland and grassland will be enhanced over time, providing improved conditions for species such as birds, bats, and other wildlife.
- 6.40. At the end of the development's life, decommissioning activities may result in similar short-term disturbances to those experienced during construction. With appropriate mitigation measures in place, residual effects are expected to be temporary and **not significant**, with opportunities for habitats to be retained or restored following removal of infrastructure.
- 6.41. In addition, the assessment found **no significant cumulative ecological effects**. Potential interactions with other developments through habitat loss, disturbance or water quality are limited and effectively controlled through mitigation measures.
- 6.42. Overall, the Proposed Development will not result in significant adverse ecological effects, and through the delivery of mitigation and enhancement measures, is likely to protect key ecological features and provide long-term biodiversity benefits across the Site.

Glint and Glare

Introduction

- 6.43. The Glint and Glare Chapter of the ES assesses the likely effects of glint and glare arising from the Proposed Development. Glint refers to brief flashes of reflected light, while glare is a more sustained reflection that may affect visibility or amenity.
- 6.44. The assessment considers the potential for solar reflections during the construction, operational and decommissioning phases of the development, although the operational phase represents the worst-case scenario and is therefore the primary focus of the assessment.
- 6.45. The assessment identifies and evaluates effects on key sensitive receptors, including road users, nearby residential properties, and aviation receptors such as aircraft and aerodromes. These receptors have the potential to experience changes in safety or amenity as a result of reflected sunlight from solar panels.
- 6.46. The assessment has been undertaken in accordance with relevant planning policy and industry guidance. A consistent methodology has been applied to identify receptors, model potential reflections, and assess the significance of effects, taking into account receptor sensitivity and magnitude of change.

Baseline Conditions

- 6.47. The baseline conditions indicate that the Site is located within a rural landscape, where existing vegetation, buildings and landform provide a degree of natural screening and reduce visibility of the solar panels.
- 6.48. Ground-based receptors, including road users and nearby residential properties, have been assessed within a 1km study area, reflecting industry practice and the reducing significance of glint and glare effects with distance. Within this area, key receptors include sections of the B4236 and Usk Road, as well as nearby residential dwellings (222), which have been represented through selected assessment points.
- 6.49. Existing screening from vegetation and intervening terrain is expected to limit views of the solar panels for many receptors, thereby reducing the potential for effects.
- 6.50. Aviation receptors have been considered within a wider 10km study area, in line with industry practice, and include a number of nearby airfields (Park Farm Airfield, Croes-Carn-Einion Farm Airfield, Kemeys Commander Airfield and Upfield Farm Airfield) and aviation receptors (Grange Hospital Helipad) that could potentially experience reflections.
- 6.51. Overall, the baseline conditions demonstrate that separation distances and existing landscape features provide a level of natural mitigation, which influences the extent to which receptors may experience glint and glare effects.

Mitigation and Enhancement

- 6.52. No specific mitigation measures are required as the assessment concludes that glint and glare effects are not significant. Whilst no dedicated mitigation is proposed, existing vegetation and intervening landform already provide natural screening, limiting the visibility of solar panels and reducing potential effects on receptors.
- 6.53. In terms of enhancements, any additional planting incorporated as part of the wider indicative landscaping strategy will provide further screening over time, helping to reduce visibility of the solar panels and offering a small beneficial effect for surrounding receptors.

Conclusion & Residual Effects

- 6.54. During the construction phase, glint and glare effects are expected to be equal to or less than those identified for the operational phase due to the gradual installation of panels. As such, residual effects during construction are considered to be **negligible to minor adverse** and **not significant** for all receptors.
- 6.55. During the operational phase, which represents the worst-case scenario, residual effects on all receptors are predicted to be **negligible to minor adverse** and **not significant**. Specifically, road users experience negligible residual effects (not significant) due to existing screening from vegetation and landform. Residential dwellings experience minor adverse residual effects (not significant) due to limited visibility and mitigating factors such as distance and orientation. Aviation receptors experience minor adverse residual effects (not significant), with glare effects considered acceptable in accordance with industry guidance.
- 6.56. During the decommissioning phase, effects are expected to be similar to or less than those during construction, as activities are largely the reverse of installation. Residual effects are therefore considered to be **negligible to minor adverse** and **not significant** for all receptors.
- 6.57. In terms of cumulative effects, no cumulative glint and glare impacts are predicted for any receptor, due to the separation distances between the Proposed Development and other relevant cumulative schemes. As such, cumulative residual effects are **not significant**.
- 6.58. Overall, across all phases of the development, including cumulative effects, the assessment concludes that the Proposed Development would result in no significant residual effects in relation to glint and glare for any identified receptor within the context of EIA.

Agricultural Circumstances

Introduction

- 6.59. The Agricultural Circumstances Chapter of the ES assesses the likely significant effects of the Proposed Development on agricultural circumstances, comprising agricultural land quality (as defined by the Agricultural Land Classification), soils as a physical resource, and farm businesses and the wider rural economy.
- 6.60. The assessment considers potential effects arising during the construction, operation and maintenance, and decommissioning phases of the Proposed Development. The assessment is informed by the relevant policy and guidance framework. A structured methodology has been applied, based on desk study information (including predictive ALC mapping), detailed field survey of agricultural land quality, and farm business interviews.

Baseline Conditions

- 6.61. The Site comprises predominantly agricultural land, the majority of which is of non-Best and Most Versatile (BMV) quality. Approximately 80% of the Site is non-BMV or non-agricultural land, with the remaining approximately 20% (just over 23 ha) classified as BMV land (Grades 2 and 3a). BMV land is distributed in discrete parcels across the Site rather than forming a continuous area.
- 6.62. The underlying soils are generally clay loam or silty clay loam, with two principal soil types identified: slowly permeable clay-rich soils and moderately permeable soils, sometimes shallow over rock. Soil sensitivity varies but is generally medium to high, with susceptibility to structural damage if worked in unsuitable (wet) conditions.
- 6.63. Current land use is largely grassland used for grazing, with limited areas of arable cropping. The Site supports farm holdings, most of which are part-time or involve land let for grazing or mowing, with only one full-time farming enterprise. Agricultural activity is therefore relatively low intensity and predominantly livestock-based.
- 6.64. Overall, the baseline is characterised by a predominance of non-BMV land, resilient farm businesses, and soils of moderate to high sensitivity that are capable of recovery if appropriately managed.

Mitigation and Enhancement

- 6.65. Mitigation is primarily secured through embedded design measures and good practice, with the principal control being the implementation of a Soil Management Plan (SMP) which will be secured by condition. This ensures that soils are handled, stored and reinstated appropriately, with works undertaken in suitable (dry) conditions to avoid compaction, mixing and structural damage. Construction practices are therefore designed to minimise disturbance to agricultural land and soils and to enable full restoration following temporary works.

- 6.66. The design of the Proposed Development also inherently minimises impacts on agricultural resources, including the limited permanent loss of land, avoidance and reduction of impacts on BMV land where practicable, and the use of construction methods that are largely reversible.
- 6.67. No additional mitigation measures are required beyond those already embedded within the design and secured through standard construction and soil management controls.

Conclusion & Residual Effects

- 6.68. During the construction phase, residual effects arise from temporary disturbance to agricultural land and soils, and short-term disruption to farm businesses. These effects are low in magnitude, occurring on receptors of high (BMV land), medium (non-BMV land and soils), and low (farm businesses) sensitivity, resulting in **minor adverse** or **negligible residual effects**, which are **not significant**.
- 6.69. During the operational phase, residual effects are limited. Agricultural land remains in largely agricultural use (principally sheep grazing), and soils are not subject to ongoing disturbance. Impacts on farm businesses and agricultural production are minimal. Residual effects on all receptors are assessed as **negligible** or **minor adverse**, and **not significant**. In some cases, soils may experience localised beneficial effects due to reduced cultivation and improved soil condition.
- 6.70. During the decommissioning phase, impacts are similar in nature to construction but shorter in duration. With appropriate soil handling and restoration, all effects are temporary and reversible, resulting in **minor adverse** or **negligible residual effects**, which are **not significant**.
- 6.71. In relation to cumulative effects, only a limited number of schemes involve Best and Most Versatile land, and the combined extent of permanent land loss remains small. The cumulative impact on agricultural land is a **minor cumulative adverse effect**, which is **not significant**. **No significant cumulative effects** are identified for soils or farm businesses.
- 6.72. Overall, the Proposed Development would not result in any significant residual effects on agricultural land, soils, farm businesses or the wider rural economy, either alone or cumulatively. Effects are limited in extent, largely temporary and reversible, and appropriately controlled through embedded mitigation. The development is therefore considered acceptable in terms of agricultural circumstances within the context of the EIA.

Water Environment

Introduction

- 6.73. The Water Environment Chapter of the ES assesses the potential effects of the Proposed Development on the water environment during the construction, operation, and decommissioning phases. The assessment considers how the development could affect surface water and groundwater systems, including water quality, drainage patterns, and watercourses.
- 6.74. The assessment focuses on key receptors within the study area, including main rivers, ordinary watercourses, surface water drainage systems, and groundwater bodies, all of which may be sensitive to changes in water flow, quality, or drainage conditions. Fluvial flood risk is 'scoped out' of the ES chapter in agreement with PEDW and addressed separately through the Flood Consequence Assessment (Appendix 9.1 of the ES) and is not considered likely to give rise to significant effects within the EIA.
- 6.75. The assessment has been undertaken in accordance with relevant national and local planning policy and guidance alongside established assessment methodologies based on professional judgement and recognised guidance.

Baseline Conditions

- 6.76. The Site is predominantly agricultural land, comprising a mix of arable and pasture fields located near Ponthir, with nearby settlements including Caerleon and Cwmbran. There are no main rivers within the Site boundary; however, the Afon Lwyd lies close to the southern boundary and Sor Brook is located to the east. Several smaller ordinary watercourses are present within the Site.
- 6.77. The Site drains into two Water Framework Directive (WFD) river waterbodies, both of which are classified as having moderate water quality. This means it is not in its natural/best condition and below target of "good status" with some level of pollution and ecological quality is affected.
- 6.78. The underlying geology consists mainly of mudstone and sandstone formations, which form Secondary A and Secondary B aquifers (underground layer of rock that holds water and lets it flow through it), capable of supporting groundwater at a local level.
- 6.79. Groundwater within the study area is classified as having an overall good status under the Water Framework Directive, and the Site is not located within any Source Protection Zones i.e. an area around a drinking water source where controls are put in place to stop pollution reaching the water.
- 6.80. Infiltration testing was undertaken onsite to measure how quickly water can soak into and move through the soil. The testing indicated that much of the Site has limited capacity for water to infiltrate into the ground.

- 6.81. In terms of surface water flood risk, most of the Site lies within Flood Zone 1, indicating a low probability of flooding, although some areas of higher risk are associated with existing watercourses.
- 6.82. Overall, surface water, groundwater, and drainage receptors within the Site are considered to be of medium sensitivity, reflecting their moderate water quality status and hydrogeological characteristics.

Mitigation and Enhancement

- 6.83. A range of measures have been built into the design of the Proposed Development to protect the water environment and reduce potential effects. These include:
- Protection of watercourses: A buffer (easement) of undeveloped land will be maintained alongside ordinary watercourses to allow natural flows, maintenance access and reduce the risk of pollution.
 - Drainage design: A surface water drainage strategy has been developed to ensure that runoff from the Site does not increase and that water quality is appropriately managed.
 - Design layout: Infrastructure is located away from areas at risk of surface water flooding, and solar panels are raised above ground level to maintain existing drainage patterns.
 - Good practice during construction: Measures such as construction management plans will control runoff, prevent sediment entering watercourses, and manage the storage and handling of potentially polluting substances.
- 6.84. Additional mitigation includes the use of temporary drainage controls and pollution prevention measures during construction, along with management plans to ensure water quality is protected throughout the lifecycle of the development.
- 6.85. Enhancements are also proposed through the use of sustainable drainage features (SuDS), which can provide benefits beyond mitigation, including improvements to water quality, biodiversity and visual amenity.

Conclusion & Residual Effects

- 6.86. Following the implementation of mitigation measures, the assessment concludes that residual effects on all water environment receptors are **negligible** and **not significant** during all phases of the Proposed Development.
- 6.87. During construction, effects on main rivers, ordinary watercourses, surface water drainage patterns, and both surface water and groundwater quality are predicted to be **negligible** and **not significant** with mitigation measures in place to prevent pollution and control drainage.
- 6.88. During operation, potential impacts relate to runoff, drainage patterns, and accidental pollution from maintenance activities. These are mitigated through embedded design,

including the drainage strategy, siting of infrastructure outside flood-prone areas, and water quality treatment measures. The residual effects are **negligible** and **not significant**, because the drainage design ensures no increase in runoff or flood risk, water quality is maintained through treatment and controlled discharge, and the Proposed Development will be able to operate in a stable, managed condition with no ongoing disturbance to receptors.

- 6.89. Effects during decommissioning are expected to be similar to, or less than, those during construction and are short-term in nature. With appropriate management measures, effects are considered **not significant**. This is because activities are temporary and controlled in the same way as construction and the Site will largely be restored to its former condition, reducing long-term impacts.
- 6.90. The assessment concludes that, when considered alongside other developments, **no significant cumulative effects** are expected. This is because all schemes will be required to appropriately manage surface water and comply with regulatory requirements, ensuring no increase in flood risk or deterioration in water quality.
- 6.91. Overall, with the embedded and additional mitigation measures in place, the Proposed Development would not result in any significant effects on the water environment and the proposals are considered acceptable in regards to the local water environment within the context of the EIA.

Built Heritage

Introduction

- 6.92. The Built Heritage Chapter of the ES assesses the likely significant environmental effects of the Proposed Development on built heritage, with particular regard to changes to the significance of historic assets arising from alterations to their setting. The assessment focuses on designated heritage receptors, including Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Conservation Areas.
- 6.93. The assessment considers effects during the construction, operational and decommissioning phases of the Proposed Development. The chapter has been prepared with reference to relevant legislation, planning policy and guidance.
- 6.94. The assessment is informed by a Heritage Desk-Based Assessment and follows established methodology, including desk-based review, site visits, and staged setting assessment in accordance with guidance. Archaeology has been scoped out of the ES chapter as surveys and consultation with the relevant archaeological advisor (Heneb) have confirmed no further intrusive investigation is required. Any archaeological interest is well understood and can be managed through standard measures, so it is not expected to result in significant environmental effects.

Baseline Conditions

- 6.95. The Site comprises predominantly agricultural farmland, characterised by a rural landscape of fields, hedgerows and dispersed farmsteads. Within the surrounding study area there is a high concentration of designated historic assets, including Listed Buildings, Scheduled Monuments, Registered Parks and Gardens and Conservation Areas.
- 6.96. The assessment has identified that only a limited number of these assets have a relationship with the Site whereby its land contributes to their setting and significance. These include Candwr Camp Scheduled Monument, All Saints Church at Llanfrechfa, Glansirhowy Farm, Little Creiggydd and the Barn at Pen-twyn Farm.
- 6.97. For these assets, the Site forms part of a wider agricultural landscape that contributes to how they are experienced and understood. Key characteristics of this setting include topography, intervisibility, historic land uses, and connections to surrounding farmland and access routes, which together help to illustrate their historical function and context.
- 6.98. Overall, the baseline demonstrates that while many heritage assets are present in the wider area, only a small number are sensitive to change arising from the Proposed Development due to their specific setting relationship with the Site.

Mitigation and Enhancement

- 6.99. Mitigation has been incorporated into the design of the Proposed Development to reduce potential effects on nearby heritage assets. This includes retaining areas of open land and limiting the placement of infrastructure in parts of the Site that are

important to the setting of key assets, helping to minimise visibility and maintain their rural context.

- 6.100. No additional mitigation measures are required beyond these design measures, and no specific heritage enhancements are currently proposed.

Conclusion & Residual Effects

- 6.101. The residual effects on built heritage receptors during the construction phase are predicted to be minor adverse impacts in nature, arising from temporary visual and noise disturbance associated with construction activities. For the Scheduled Monument of Candwr Camp and the Grade II* All Saints Church, this results in **moderate adverse** effects that are **not significant** in EIA terms, while for Glansirhowy Farmhouse, Little Creigydd and the Barn at Pen-twyn Farm, the effects are **slight adverse** and also **not significant**.
- 6.102. During the operational phase, the presence of solar infrastructure within the wider landscape gives rise to minor adverse impacts on the setting of all assessed receptors. This equates to **moderate adverse effects (not significant)** for Candwr Camp and All Saints Church, and **slight adverse effects (not significant)** for Glansirhowy Farmhouse and the Barn at Pen-twyn Farm, reflecting the limited visibility and retention of overall landscape character.
- 6.103. During decommissioning, the removal of infrastructure restores baseline conditions for all receptors, resulting in **neutral effects** that are **not significant**. Accordingly, no significant residual effects are identified for any built heritage receptor during construction, operation or decommissioning.
- 6.104. No cumulative effects have been identified with other developments. Therefore, cumulative effects are **not significant**.
- 6.105. Overall, the Proposed Development does not give rise to any significant effects on built heritage receptors.

Transport and Access

Introduction

- 6.106. This Transport and Access Chapter Statement assesses the potential effects of the Proposed Development on the local highway network and the movement of people and vehicles. It considers how traffic generated by the development may affect road conditions, safety and accessibility.
- 6.107. The assessment focuses on the construction, operation and decommissioning phases, with particular emphasis on the construction and decommissioning stages, when traffic movements are greatest.
- 6.108. Key receptors include users of the road network and surrounding environment, such as motorists, pedestrians and cyclists, public transport users, residents, and sensitive locations including schools, hospitals and areas with higher levels of pedestrian activity.
- 6.109. The assessment has been carried out in accordance with relevant national and local planning policy and technical guidance, including industry-standard methodology for assessing traffic and movement effects. In particular, the following are assessed:
- Local communities and their ability to move around (Severance and Driver Delay)
 - Delays for drivers, passengers, and people walking or cycling (Driver Delay and Non-Motorised User Delay)
 - Comfort and convenience for pedestrians and cyclists (Non-Motorised User Amenity)
 - Feelings of safety and confidence on the roads (Fear and Intimidation)
 - Overall road and pedestrian safety (Road Safety)

Baseline Conditions

- 6.110. The Application Site is located within a largely rural area consisting of agricultural land, served by a network of local roads and Public Rights of Way.
- 6.111. The surrounding highway network includes a mix of rural lanes and more strategic routes. Local unnamed roads are typically narrow, unlit and lack pedestrian or cycle infrastructure, while larger routes such as the B4236 Caerleon Road and A4042 provide key connections to nearby settlements and the wider road network.
- 6.112. A number of Public Rights of Way pass through and around the Site, providing pedestrian access and connectivity between local communities.
- 6.113. Traffic surveys undertaken on the surrounding road network indicate generally low traffic flows on the rural lanes, with higher volumes on the main roads. Collision data shows a small number of recorded incidents over recent years, with no evidence of an existing highway safety issue within the study area.

- 6.114. Overall, the baseline conditions indicate a predominantly rural transport environment with low levels of traffic on local roads and no significant existing constraints in terms of highway safety.

Mitigation and Enhancement

- 6.115. Mitigation measures are primarily delivered through the implementation of a Construction Traffic Management Plan (CTMP), which will be secured by condition and designed to minimise the impact of construction traffic on local residents and the highway network. The CTMP will include measures such as traffic management controls, routing strategies, delivery timing, and environmental management procedures to reduce disruption and maintain safety during the construction phase
- 6.116. A similar approach will be applied at the end of the development's life through a Decommissioning Traffic Management Plan (DTMP), which will manage traffic effects associated with the removal of the development.
- 6.117. Enhancements are proposed through improvements to local access and connectivity, including the provision of new permissive routes within the Site that will enhance links to the existing Public Rights of Way network and provide additional recreational opportunities for the local community.
- 6.118. Overall, these measures are intended to reduce potential impacts during construction and decommissioning, while delivering longer-term benefits to local access and connectivity.

Conclusion & Residual Effects

- 6.119. During the construction phase, the majority of receptors, including road users, local residents and non-motorised users, would experience residual effects that are **negligible to minor** and therefore **not significant**. However, on a small number of rural roads, increases in traffic and associated driver delay would result in **moderate adverse residual effects**, which are considered **significant**, although these effects would be temporary and short-term in nature.
- 6.120. During the operational phase, traffic associated with the Proposed Development would be minimal, and all receptors would experience **negligible residual effects**, which are **not significant**. There would therefore be no meaningful impacts on the highway network or its users once the development is operational.
- 6.121. During the decommissioning phase, the residual effects are expected to be similar to those during construction. Most receptors would experience **negligible to minor residual effects**, which are **not significant**, alongside some **moderate adverse** effects relating to traffic flows and driver delay on certain rural links, which are **significant** but temporary and short-term.
- 6.122. **No cumulative residual effects** have been identified in combination with other developments, and therefore there are no cumulative significant effects associated with the Proposed Development.



- 6.123. Overall, taking all phases and receptors into account, the Proposed Development would result in predominantly not significant residual effects, with only limited and temporary significant effects during construction and decommissioning. The assessment therefore concludes that, with mitigation in place, the Proposed Development is acceptable in transport and access terms and would not result in any long-term adverse significant effects within the context of EIA.

Air Quality

Introduction

- 6.124. This Air Quality Chapter assesses the potential effects of the Proposed Development on local air quality. The assessment focuses on the construction and decommissioning phases, during which air quality may be affected by emissions from construction traffic, on-site machinery, and dust generated by site activities.
- 6.125. The assessment considers the potential effects of nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) produced from vehicles and machinery, as well as dust, on sensitive receptors. These receptors primarily comprise nearby residential properties and locations where people may be regularly present, alongside ecological receptors where relevant.
- 6.126. The assessment has been undertaken with reference to relevant legislation, planning policy and best practice guidance, including national and Welsh air quality regulations and guidance published by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK).
- 6.127. The methodology defines a study area surrounding the Site and considers baseline air quality conditions, the characteristics of potential emission sources, and the sensitivity of receptors in order to identify and evaluate likely significant effects, together with any required mitigation measures and the resulting residual effects.

Baseline Conditions

- 6.128. Air quality in and around the Site is generally good. Monitoring data from nearby locations shows that levels of common pollutants are well below national air quality standards set to protect human health.
- 6.129. There are no significant industrial sources of air pollution in the area. Instead, the main sources of pollutants are road traffic and, to a lesser extent, local agricultural activities.
- 6.130. Background pollution levels, taken from national datasets, are low and are expected to remain low in the future, with a general improving trend over time.
- 6.131. The nearest designated Air Quality Management Area (AQMA) is located some distance from the Site and does not directly influence air quality conditions at the Site
- 6.132. Overall, the Site is located within a predominantly rural area with relatively good air quality and low baseline pollution levels.

Mitigation and Enhancement

- 6.133. A range of standard good practice measures will be used during construction to control dust and emissions from vehicles and machinery. These include managing site activities to minimise dust, switching off machinery when not in use, and keeping

appropriate distances between construction works and nearby properties where possible.

- 6.134. These measures are embedded within project management plans to ensure they are implemented throughout the construction and decommissioning phases, helping to reduce any effects on local air quality.
- 6.135. No additional mitigation is required beyond these standard measures.
- 6.136. During operation, the Proposed Development is expected to provide a wider benefit to air quality by supporting the generation of clean energy, which reduces the need for electricity generated from polluting sources.

Conclusion & Residual Effects

- 6.137. With the mitigation measures in place, the assessment concludes that effects on air quality during the construction and decommissioning phases will be **negligible** and **not significant** for all receptors, including nearby residents. This is because the assessment identifies very low changes in air quality and effective control measures, meaning there is no meaningful impact on people or the environment.
- 6.138. There are **no significant** effects during the operational phase, and the development is expected to have a positive influence on air quality more widely through the generation of clean energy.
- 6.139. Cumulative effects are assessed as **negligible** and **not significant** due to the low level of emissions and distance from other sites.
- 6.140. Overall, taking into account the good baseline conditions and the implementation of standard mitigation measures, the Proposed Development is not expected to result in any significant adverse effects on air quality within the context of EIA.

Other Environmental Topics

- 6.141. As part of the EIA Scoping process, it was agreed with Planning and Environment Decisions Wales (PEDW) that certain topics, including noise and climate change, did not require inclusion as standalone chapters within the ES. This reflects the nature and scale of the Proposed Development and the likelihood of significant environmental effects.
- 6.142. However, proportionate assessments of these topics have been undertaken to ensure that any potential effects are appropriately considered and reported. The full technical assessments are provided as appendices to the ES.
- 6.143. A summary of the key findings of these assessments is provided below to support understanding of the Proposed Development and its environmental effects

Noise

- 6.144. A standalone noise assessment has been undertaken and is provided as an appendix to the ES.
- 6.145. The assessment considers potential noise during construction, operation and decommissioning of the Proposed Development. During construction, temporary increases in noise may occur from plant and vehicle movements; however, these will be managed through standard good practice measures, including the use of appropriate equipment, working hours controls and management plans in a Construction Environmental Management Plan (CEMP) secured by planning condition.
- 6.146. During operation, the solar farm is expected to generate very low levels of noise, primarily from electrical equipment such as inverters and substations. These sources have been designed and located to ensure that noise levels remain acceptable at nearby sensitive receptors, such as residential properties.
- 6.147. Overall, with mitigation in place, no significant noise effects are expected.

Climate

- 6.148. A Greenhouse Gas and Climate Change Resilience Assessment has been prepared and is provided as an appendix to the ES. This considers both the Proposed Development's contribution to climate change (through greenhouse gas emissions) and its resilience to future climate conditions.

Greenhouse Gas Emissions

- 6.149. The assessment considers emissions over the full lifecycle of the Proposed Development, including construction, operation and decommissioning. Emissions will arise mainly during construction (particularly from materials) and from maintenance activities during operation. However, the solar farm will generate renewable electricity, replacing fossil fuel-based generation and reducing overall greenhouse gas emissions.



- 6.150. Over its lifetime, the Proposed Development is predicted to result in a net reduction in greenhouse gas emissions compared to a scenario without the development. Overall, the effect on climate change is assessed as significantly beneficial due to the contribution to reducing carbon emissions and supporting the transition to net zero.

Climate Change Resilience

- 6.151. The assessment also considers how future climate conditions may affect the Proposed Development, including:
- hotter, drier summers;
 - wetter winters and increased flood risk; and
 - more frequent extreme weather events such as storms.
- 6.152. Design and mitigation measures have been incorporated to ensure the Proposed Development is resilient to these changes, including flood risk management, appropriate equipment design, and management plans to address extreme weather.
- 6.153. The assessment concludes that there would be no significant effects from climate change on the Proposed Development, and that it is suitably resilient over its lifetime.

7. Summary and Conclusions

- 7.1. This document has provided a Non-Technical Summary of the Environmental Statement (ES) which has been prepared on behalf of the Applicant in support of an application for a ground-mounted solar energy project and all associated works and infrastructure.
- 7.2. The aim of the ES, of which this NTS summarises, has been to assess the '*likely significant* effects' of the Proposed Development in accordance with the EIA Regulations. Detailed assessments with respect to pertinent environmental topics have therefore been undertaken in accordance with definitive standards and legislation where available. This NTS will form part of the planning application documentation submitted to the Welsh Ministers and will inform their decision-making process.
- 7.3. The design process has been informed by the detailed environmental assessments so to ensure that key design measures are integral to the Proposed Development so to limit any significant adverse effects. All aspects of the design have taken full account of the environmental opportunities and constraints present. Retention of agricultural land and, where necessary, mitigation measures and enhancements form an integral part of the proposals to ensure that the environment is suitably protected. As a result of this process, taking into account mitigation measures, significant long term adverse residual effects are limited to significant adverse residual effects are limited and highly localised. These occur only in relation to:
- Landscape and Visual – Visual Receptors (Operational Phase only)
 - Significant adverse effects are identified at a small number of viewpoints close to or within the Site, primarily affecting nearby residents and users of Public Rights of Way. These effects arise due to direct views of solar infrastructure that cannot be fully screened by mitigation planting, particularly given the rolling topography of the Site which allows intermittent visibility even as planting matures. However, these effects are localised and reduce with distance, with the majority of visual receptors experiencing non-significant effects.
 - Transport and Access (Construction and Decommissioning Phases only)
 - Significant adverse effects are identified on a limited number of rural road links, where temporary increases in traffic during construction and decommissioning give rise to moderate adverse effects associated with driver delay and traffic flow changes. These effects are short-term, reversible and confined to the construction/decommissioning periods. It is important to note that these effects are largely influenced by the very low existing levels of traffic on these roads and because baseline

traffic flows are low, even relatively small increases in vehicle numbers can appear as large percentage changes. No significant effects are identified during operation.

- 7.4. Overall, these significant effects are temporary and/or geographically limited, and no long-term, widespread or irreversible significant adverse effects have been identified.
- 7.5. The ES concludes that, following the implementation of embedded and additional mitigation measures, no significant adverse residual effects are predicted in relation to the following environmental topics:
- Landscape Character and Landscape Elements – Effects are limited and the underlying rural character is retained.
 - Ecology and Biodiversity – Effects are not significant, with the Proposed Development expected to deliver biodiversity enhancements and net gains over time.
 - Glint and Glare – All effects are negligible to minor and not significant across all receptors, including aviation.
 - Agricultural Circumstances (land, soils and farm businesses) – Effects are minor or negligible and reversible, with continued agricultural use maintained.
 - Water Environment – With mitigation and drainage design in place, effects on water quality, flows and flood risk are negligible and not significant.
 - Built Heritage – Based on the assessment approach and embedded mitigation, no significant effects on heritage assets or their setting are anticipated.
 - Transport and Access – No significant adverse effects during the operational phase.
 - Air Quality and Noise – Effects are controlled through standard measures and are not significant.
 - Climate Change – The Proposed Development results in a significant beneficial effect through greenhouse gas reductions, with no significant adverse effects identified.
- 7.6. In all cases, effects are either negligible to minor, temporary, or effectively mitigated through design and management measures, ensuring compliance with the EIA Regulations.



- 7.7. In conclusion, the EIA demonstrates the Proposed Development has taken into account the potential environmental effects and where necessary mitigation measures form an integral design so to ensure that any effects are either not significant in EIA terms or reduced as far as possible. The ES demonstrates how the proposed scheme would bring about benefits to the local environment, whilst providing renewable energy generation in a sustainable location.

8. Glossary

Term	Definition
Applicant	The organisation promoting the Proposed Development (Candwr Solar Farm Ltd).
Agricultural Land Classification (ALC)	A system used to grade the quality of farmland based on its physical and chemical characteristics.
Baseline	The existing environmental conditions against which the effects of the Proposed Development are assessed.
Biodiversity	The variety of plant and animal life in a particular area.
Construction Environmental Management Plan (CEMP)	A document setting out how environmental effects will be managed and controlled during construction.
Cumulative Effects	Effects that result from the combination of the Proposed Development with other existing or approved developments.
Decommissioning	The process of removing the development at the end of its operational life and restoring the Site.
Development of National Significance (DNS)	A category of major development in Wales determined by Welsh Ministers due to its size or importance.
Effect	The result of an impact on a receptor, such as a change to the environment.
Environmental Impact Assessment (EIA)	A process used to identify, assess and report the likely significant environmental effects of a development.
Environmental Statement (ES)	A document that reports the findings of the Environmental Impact Assessment.
Glint and Glare	Reflection of sunlight from solar panels, either as a brief flash (glint) or a sustained reflection (glare).
Greenhouse Gas (GHG) Emissions	Gases released into the atmosphere that contribute to climate change.

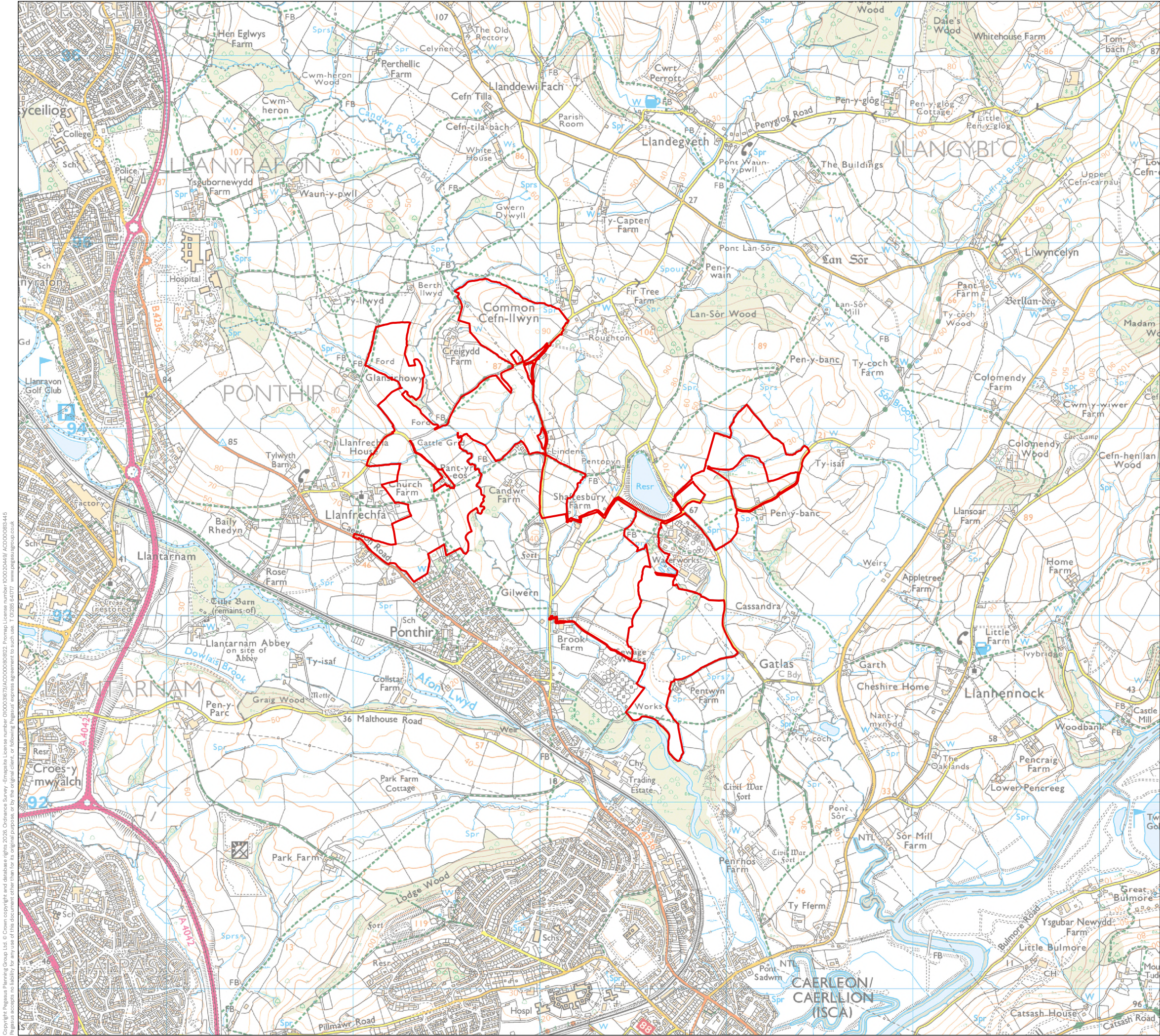
Habitat	The natural environment in which plants and animals live.
Impact	The action or change caused by the Proposed Development which may lead to an effect.
Mitigation	Measures put in place to avoid, reduce or manage adverse environmental effects.
National Grid	The system used to transmit electricity across the country.
Non-Technical Summary (NTS)	A document that explains the findings of the ES in clear, accessible, non-technical language.
Operational Phase	The period during which the development is in use and generating electricity.
Planning and Environment Decisions Wales (PEDW)	The body responsible for administering DNS applications on behalf of Welsh Ministers.
Proposed Development	The solar farm and associated infrastructure being assessed in the Environmental Statement.
Receptor	A feature that may be affected by the Proposed Development, such as people, wildlife or water.
Residual Effects	Effects that remain after mitigation measures have been applied.
Significance (of Effect)	A measure of how important an effect is, based on the sensitivity of the receptor and the magnitude of change.
Solar Photovoltaic (PV) Panels	Panels that convert sunlight into electricity.
Special Area of Conservation (SAC)	A designated site of international importance for wildlife and habitats.
Site of Special Scientific Interest (SSSI)	A nationally important site protected for its wildlife or geology.
Sustainable Drainage Systems (SuDS)	Systems designed to manage rainfall and surface water in a sustainable way.



Water Framework Directive (WFD)	Legislation used to assess and manage water quality.
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Figure 1 – Site Location Plan



KEY

Site Boundary

REV	DATE	DESCRIPTION
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SITE LOCATION PLAN

CANDWR SOLAR FARM

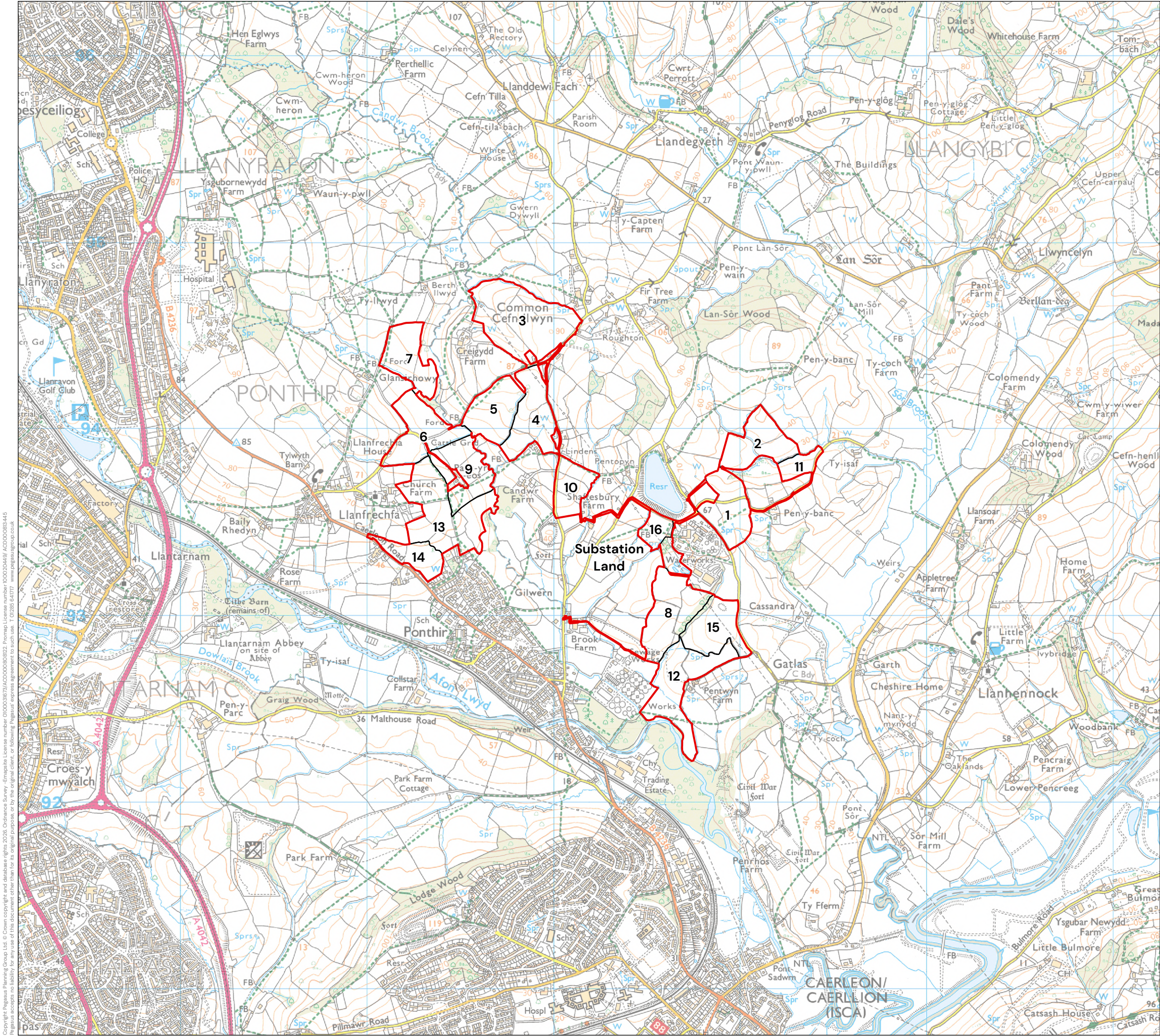
CANDWR SOLAR FARM LIMITED

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KEY

Site Boundary

Field Boundaries

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FIGURE 3.2: LAND PARCEL PLAN

CANDWR SOLAR FARM

CANDWR SOLAR FARM LIMITED

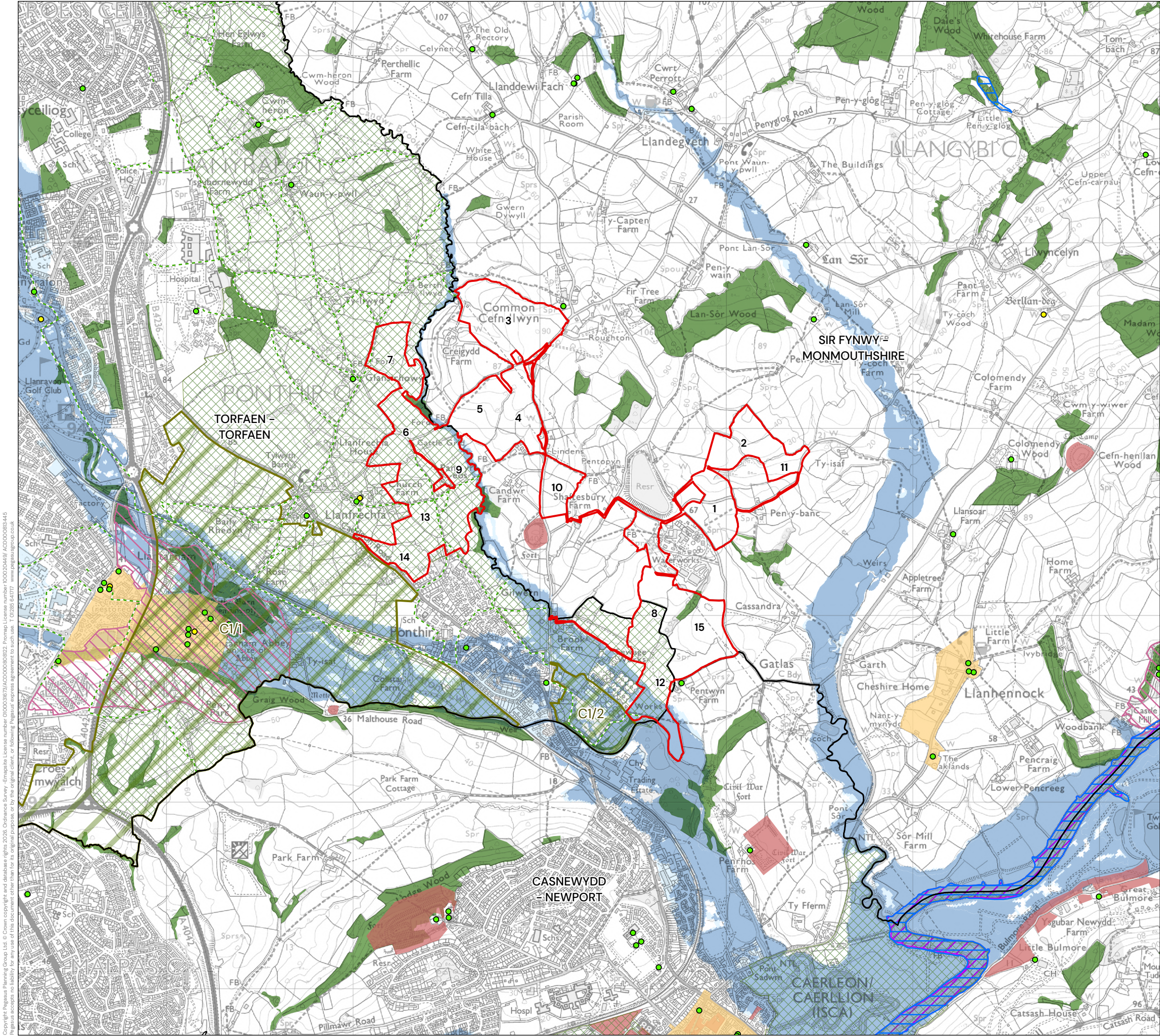
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Figure 2 – Environmental Designations Plan



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KEY

Site Boundary

District Boundary

Listed Buildings Grade

II*II

REV	DATE	DESCRIPTION
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ENVIRONMENTAL DESIGNATION PLAN

CANDWR SOLAR FARM

CANDWR SOLAR FARM LIMITED

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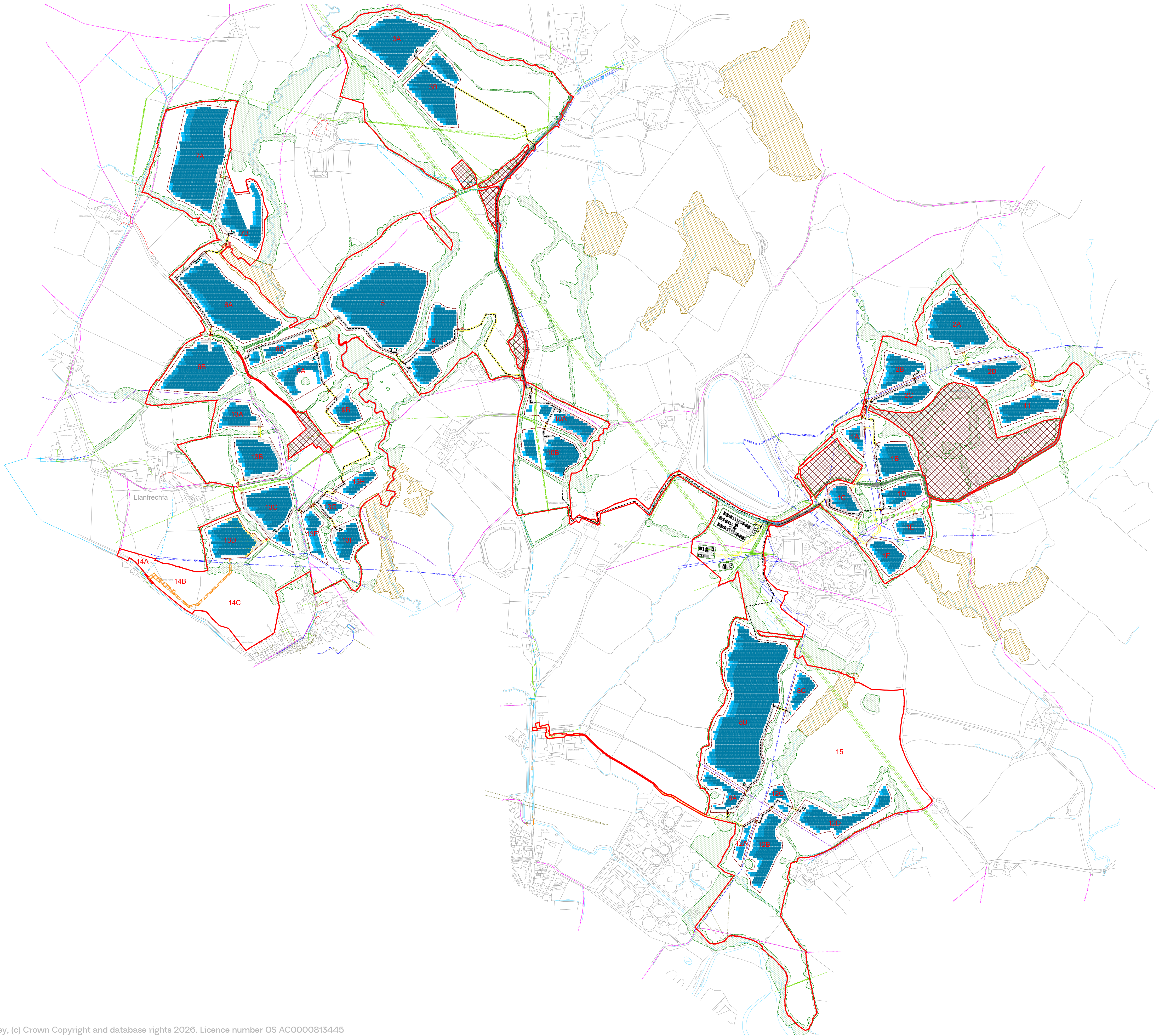
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Figure 3 –Indicative Site Layout



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This drawing is to be submitted for planning purposes only. All dimensions are to be confirmed on site prior to commencement of work.

Revisions:				
Revision	Date	Revision Notes	Drawn	Inspected
01	03.10.25	First Issue (2 in portrait panels with inter row spacing of 2m)	RR	TH
02	09.10.25	Adjusted inter row spacing to 1.5m and distance from fence to panels to 3.5m	RR	TH
03	27.10.25	Adjusted tracks and amended RLB	EW	TH
04	11.12.25	Planning Application Boundary and Access Adjusted	RE	TH
05	05.01.26	Tracks and Gates Adjusted in Parcels 5, 6 and 7, CCTV and Fence Adjusted	RE	TH
06	06.01.26	Planning Application Boundary Amended	RE	TH
07	16.04.26	Cable Route Added	RR	TH
08	17.04.26	Updated Substation Design Added, Planning Application Boundary and Cable Route Adjusted	RR	TH
09	12.05.26	RLB, Access Tracks, Cable Route and Legend Adjusted, Land Not Part of Planning Application Boundary, Main Site Compound, Haul Road and Substation Design Added	RR	TH
10	20.05.26	RLB, CCTV and Haul Road adjusted, panels relocated / removed	RR	TH
11	27.05.26	Fenceline and Access Tracks Adjusted	RR	HB

LEGEND:	
	WATER COURSE
	PLANNING APPLICATION BOUNDARY
	LAND NOT PART OF PLANNING APPLICATION BOUNDARY
	PUBLIC HIGHWAY
	FOOTPATH

SOLAR SITE INFRASTRUCTURE:	
	SUBSTATION
	CABLE ROUTE
	PERIMETER FENCELINE
	PALISADE FENCELINE
	INDICATIVE TEMPORARY CONSTRUCTION COMPOUND
	MAIN SITE COMPOUND
	INDICATIVE HAUL ROAD
	PASSING PLACE
	INDICATIVE TEMPORARY CONSTRUCTION ACCESS
	SITE ACCESS TRACK
	MAINTENANCE TRACK
	TRANSFORMER
	MV STATION
	INVERTER
	PV FULL TABLE
	PV HALF TABLE
	PV QUARTER TABLE
	SECURITY GATE (PERIMETER)
	SECURITY GATE (PALISADE)
	CCTV CAMERA

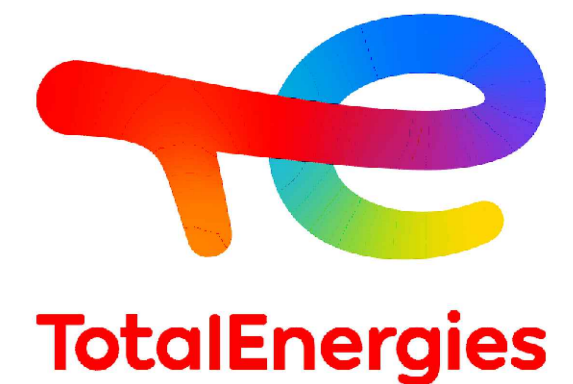
SERVICES:	
	ELE — HV — ELE — EXISTING O/H CABLE ROUTE
	ELE — HV 33kV — EXISTING 33kV O/H CABLE ROUTE
	ELE — HV 132kV — EXISTING 132kV O/H CABLE ROUTE
	ELE — LV — ELE — EXISTING U/G CABLE ROUTE
	TEL — TEL — TEL — EXISTING TELECOM SERVICES
	GAS — GAS — GAS — EXISTING GAS SERVICES
	WAT — WAT — WAT — EXISTING WATER MAIN
	SW — SW — SW — EXISTING SEWER SURFACE WATER

VEGETATION:	
	EXISTING VEGETATION
	ANCIENT WOODLAND
	VEGETATION TO BE REMOVED

Status:

PLANNING

Project: **CANDWR SOLAR FARM**
LAND AT COURT FARM, PONTNIR, MONMOUTHSHIRE
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Drawing Title: **CAMDWR SOLAR FARM**
INDICATIVE SITE LAYOUT PLAN (2 IN PORTRAIT)

Drawn: RR	Checked: TH	Drawing Scale: 1:5000	Size: A1
Project Code: PEG002-	Drawing Number: PL-01.1	Revision: 11	

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CANDWR SOLAR FARM - INDICATIVE SITE LAYOUT PLAN (2 IN PORTRAIT)

Scale: 1:5000@A1

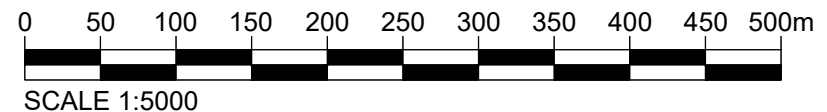
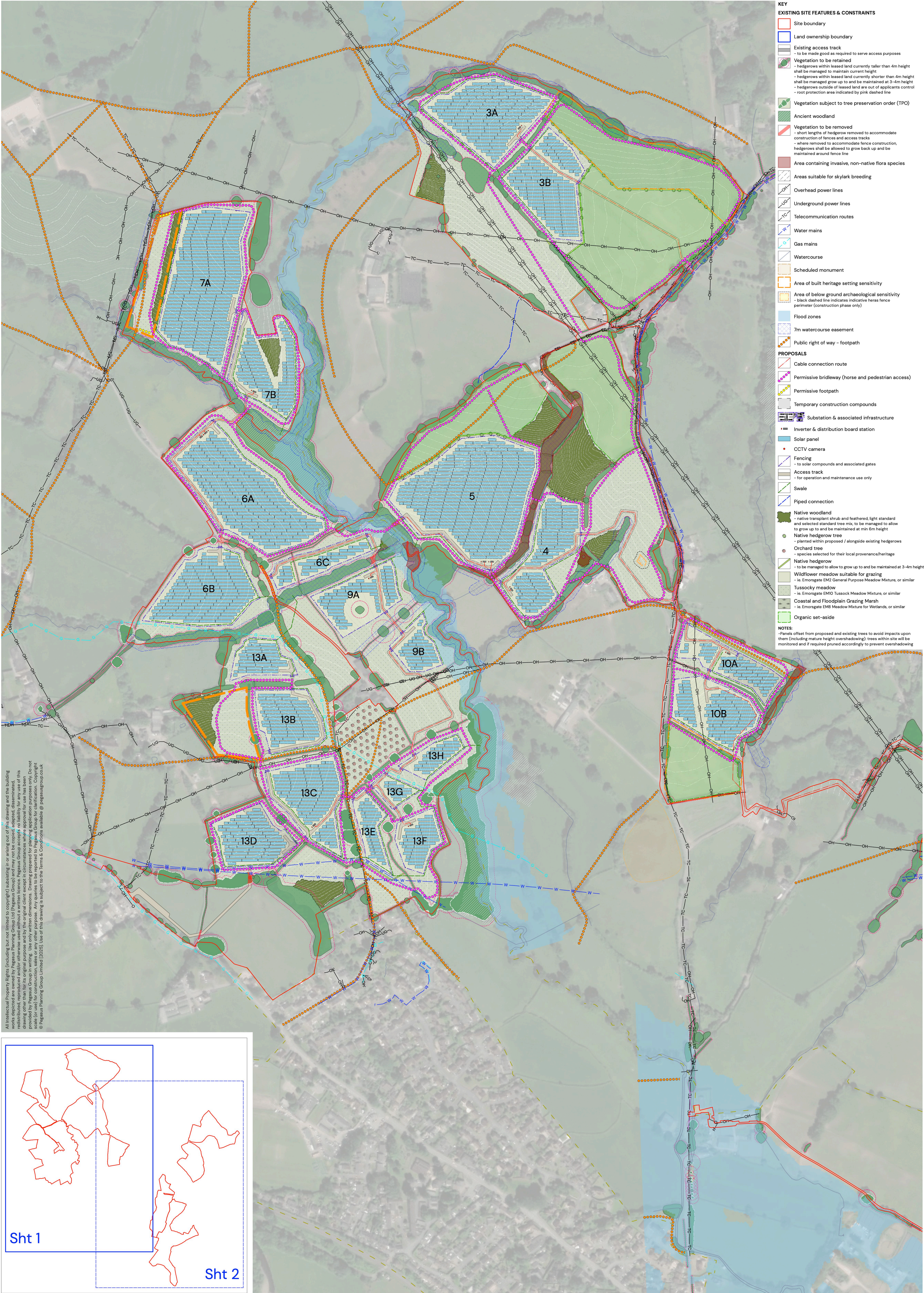
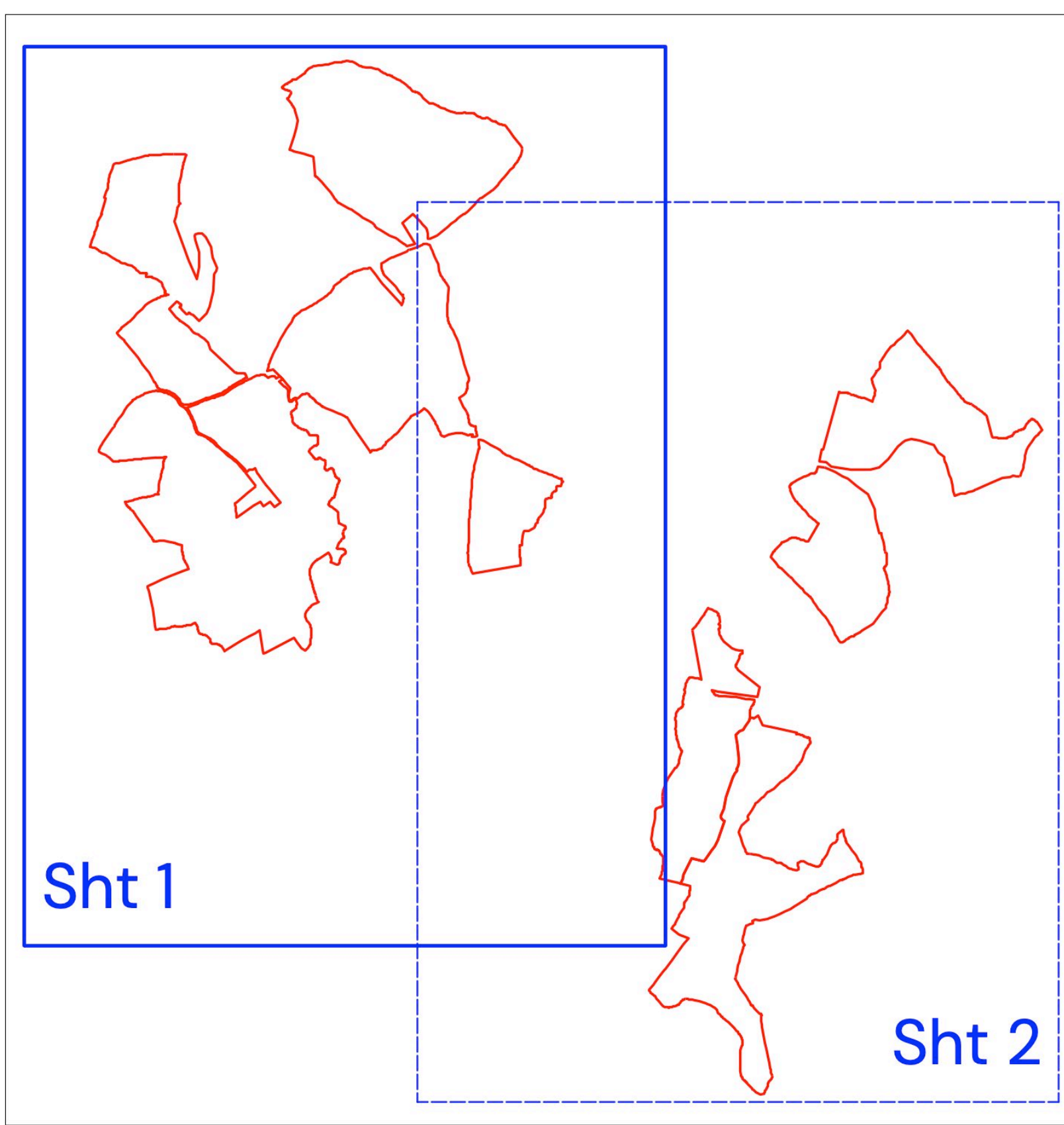


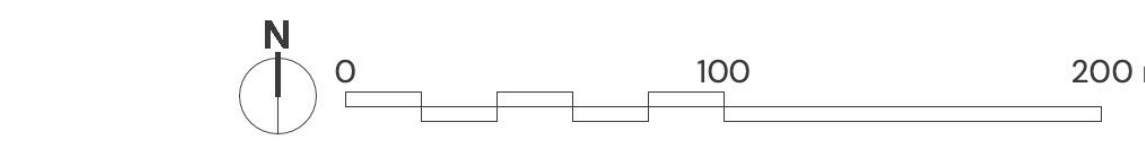
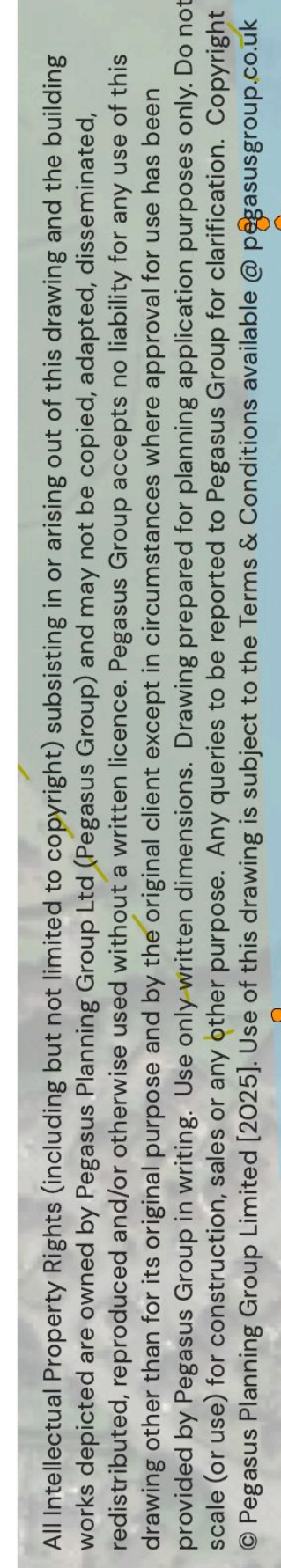


Figure 4: Indicative Landscape Strategy



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