Environmental Statement: Non-Technical Summary (English)

ES NTS 01

Development of National Significance

Alaw Môn Solar Farm

Land west of the B5112, 415m south of Llyn Alaw, 500m east of Llantrisant and 1.5km west of Llannerch-y-Medd, Anglesey

February 2024

Alaw Môn Solar Farm, Anglesey

Environmental Statement

Non-Technical Summary

On behalf of **Wylfa Green Ltd**

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For and on behalf of Stantec UK Limited			

Contents

Figures

1 Introduction

1.1 Overview

1.1.1 Wylfa Green Ltd (the Applicant) is submitting an application for a Development of National Significance (DNS) comprising a ground-mounted solar photovoltaic (PV) farm with a generating capacity of approximately 160 Mega-Watts (MW), battery energy storage facility (BESS), and associated infrastructure (the Development), on land to the west of the B5112 and to the south of Llyn Alaw at Llantrisant, Anglesey (the Site, see Figure 1.1). The Site extends to approximately 268.77 hectares (ha) and located within the administrative boundary of the Isle of Anglesey County Council (IACC).

1.1.2 An Environmental Statement (ES) has been prepared to support the DNS application. The ES is the report of an Environmental Impact Assessment (EIA) carried out as required by national legislation (the EIA Regulations). This document is the non-technical summary of the ES and summarises the content and conclusions of the ES.

1.2 Environmental Statement Availability

1.2.1 Comments on the DNS application can either be made to Planning and Environment Decisions Wales (PEDW) or can be forwarded to the following address:

Planning and Environment Decisions Wales
Crown Buildings
Cathays Park
Cardiff
CF10 3NQ

Tel: 0300 0604400

The ES may be purchased in volumes, the costs for which are set out below:

- Non-Technical Summary (NTS) - £15;
- Volume 1: ES Main Text & Figures - £250;
- Volume 2: ES Appendices - £450; and
- Full copy (Volumes 1 and 2 with NTS) of the ES on a data stick - £15.

1.2.2 For copies of any of the above, please contact the Environmental Planning team at Stantec:

Environmental Planning Team
Stantec UK Limited
7 Soho Square
London
W1D 3QB

Tel: 020 7446 6888

2 EIA Methodology

2.1 Overview

2.1.1 EIA is a procedure used to assess the likely significant effects of a proposed development on the environment. The results are written into an ES which is submitted with the DNS application. The ES provides PEDW with sufficient information about the potential environmental effects of the Development before a decision is made about the DNS application.

2.1.2 The ES predicts the significance of each environmental effect, during the construction, operational and decommissioning phases of the Development, which is determined by two factors:

- The sensitivity, importance or value of the environment (such as people or wildlife); and
- The actual change taking place to the environment (i.e. the size or severity of change taking place).

2.1.3 Most environmental disciplines classify effects as negligible, adverse or beneficial, where effects are minor, moderate or major. Some disciplines use bespoke criteria based on published guidance.

2.1.4 The ES includes a description of the current environmental conditions, known as the baseline conditions, against which the likely significant environmental effects of the Development have been assessed. The ES also considers the future baseline and how, in the absence of the Development, the Site may change.

2.2 Scoping

2.2.1 Scoping involves focusing an ES on the likely significant effects of a proposed development on the environment during the construction and operational phases.

2.2.2 An EIA Scoping Report[1] was submitted to Planning Inspectorate Wales (now PEDW). This explained the proposed approach to the EIA process and included the proposed methodology for assessing effects. Planning Inspectorate Wales (now PEDW) responded with its views through an EIA Scoping Direction on 11th June 2021, which was authorised by the Welsh Ministers. Following the response from PEDW, the following subject areas have been scoped into the ES:

- Cultural Heritage;
- Landscape and Views;
- Biodiversity;
- Water Environment;
- Transport and Access;
- Air Quality;
- Noise and Vibration; and
- Agricultural Land;

2.2.3 Population and Human Health and Major Accidents and Disasters have also been scoped into the ES but are addressed within the assessments for the topics set out above, where relevant, rather than as separate topics.

[1] A document that supports a request for a Scoping Direction to be issued by the Welsh Ministers to set out the scope, and level of detail, of the information to be provided in the ES.

2.3 Cumulative Effects

An EIA must assess the potentially significant effects of a proposed development that may arise cumulatively (when combined with) other major development with planning permission or under construction in the local area. Whilst not yet approved, following pre-application consultation (PAC) comments issued by IACC, the schemes in Table 2.1 have been assessed within the ES and can be seen in Figure 2.1. As such, the ES will assess if there are any likely significant effects of the Development when considered with Maen Hir Solar and Energy Project and Carogg Ganol Battery Energy Storage System. The assessments make use of publicly available information for the two schemes and rely on the professional judgment of the technical consultants. The Maen Hir Solar and Energy Project is at an early stage and it will likely be some time before an application is submitted. If the Development has consent at that point, the ES for this project will be required to consider it in its cumulative assessment. **Table 2.1 – Cumulative Schemes**

Application Reference	Description	Current Status	Distance to Site
Maen Hir Solar and Energy Storage Project (Development Consent Order (DCO) case reference: EN010156)	Electricity Generating Station including solar photovoltaic panels with a generating capacity in excess of 250 MW, a Battery Energy Storage System (BESS), a new substation and other associated development.	Pre-Application. Request for EIA Scoping Opinion submitted to the Planning Inspectorate (PINS) as DCO projects are not determined by IACC or PEDW.	3km north east
Carogg Ganol Battery Energy Storage System (IACC Ref: FPL/2023/218)	Installation of battery energy storage system, together with substation, transformer stations, site accesses, internal access tracks, security measures, access gates, other ancillary infrastructure and landscaping and biodiversity enhancements.	Submitted to the IACC.	6km north

2.4 Decommissioning Effects

2.4.1 The ES has assessed the likely significant effects of the Development on the environment during the decommissioning phase. The significance of the decommissioning phase effects identified in the ES are generally similar to the construction phase effects.

3 Site and Development Description

3.1 Site Context and Description

3.1.1 The Site is located on the Isle of Anglesey in North Wales, within the administrative boundary of IACC and extends to 268.77ha (as shown in Figure 1.1). The Site is located approximately 500m to the south east of the small hamlet of Llantrisant and approximately 1.5km to the west of the village of Llannerch-y-medd. It is also to the west of the B5112 and approximately 415m to the south of Llyn Alaw. The Site includes land within the adopted highway of local roads that runs from the main part of the Site to the point of connection to the National Grid Substation at Wylfa.

3.1.2 The topography of the landscape within which the Site is located is rolling, and to the north, the Site extends over and down a local ridgeline that defines the south-eastern edge of the Afon Alaw valley. Llyn Alaw reservoir is a large waterbody to the north of the Site, with the rivers Afon Alaw and Cors-y-bol flowing south-west towards the coast. There are a number of smaller watercourses and drains through and between the Site, including a tributary of the Cors-y-bol; a pond within the Site, drainage ditches, and a number of ponds in the immediate vicinity of the Site.

3.1.3 The Site is irregularly shaped. Within the central part of the Site, several farm buildings at Nantanog are present, which are encompassed by, but located outside of, the Site boundary. Other properties in the vicinity of the Site include a cluster of houses in the hamlet of Carmel to the south of the Site.

3.1.4 The Site comprises predominantly agricultural fields, currently utilised for grazing purposes. The agricultural fields are typically bound by hedgerows.

3.2 The Development

3.2.1 The Applicant is submitting a DNS application in line with the formal description of the Development included below:

> *"Installation of a solar farm and energy storage facility, with associated infrastructure, works, and access"*

3.2.2 The solar PV panels will be ground mounted to a piled frame made of galvanised steel or aluminium. The posts would be pile-driven into the ground to a suitable depth based on the ground conditions within the Site to secure the framework without the need for concrete foundations. The framework is designed to hold the solar PV panels secure in high winds and will be designed according to the relevant codes and standards. The solar PV panels are of a 'fixed' design. This means that the supporting metal framework is installed at 15° to 30° from horizontal having a maximum height of 3m above existing ground levels in long linear rows running from east-west. The solar PV panels will face south. The installed angle is dependent on the existing ground topography and spacing between each row of solar PV panels.

3.2.3 It is anticipated that the total electricity generating capacity of the Development would be approximately 160MW.

3.2.4 The Development, as shown on Figure 3.1, will include the following equipment:

- Solar PV arrays which will include fixed panels positioned at a 'fixed' tilt and orientation., which would be a maximum of 3m in height with the solar PV panel raised 0.8m from the existing ground level at a fixed orientation and tilt angle of between 15° and 30°;
- 34 inverter and transformer units (measuring 2.4m in width x 12.2m in length x 3.5m in height) at various locations around the solar PV arrays;
- A 132 kilovolt (kV) substation including 33kV switch rooms, a 132kV relay room, transformers, circuit breakers, an LV control room and associated electrical equipment up to 6m in height. The substation is constructed on an aggregate base following 'cut and fill' earthworks;

- Battery Energy Storage System (BESS) Facility of 42 containers (each measuring 2.4m in width x 12.2m in length x 2.9m in height) containing batteries, 21 battery inverter and transformer units, a control room (measuring 3m in width x 6m in length x 5.7m in height (to top of weather station) and substation building, comprising a single compound adjacent to the 132 kV substation. The BESS Facility is constructed on two levels following 'cut and fill' and earthworks;

- Boundary fencing around the perimeter of the Site extending to 2.1m in height. This fencing will comprise wooden pressure treated tanalised posts and high-tensile, galvanised steel, and plain wire deer fence. The fence will be equipped with badger/fox/small mammal gates at appropriate points to enable free access. The fencing enclosing the BESS Facility and substation is 2.4m in height wire mesh fencing;

- A CCTV system, pole mounted, located at strategic points around the Site perimeter. CCTV cameras will be between 2.5m and 3m above ground level;

- Associated access tracks;

- Two storage containers (measuring 2.4m in width x 12.2m in length x 2.9m in height) for spare parts etc.;

- Relevant communications and monitoring equipment, including weather station; and

- Creation of new or improvement of existing vehicular accesses for the construction, operational and decommissioning phases of the Development.

3.2.5 The BESS Facility proposed may be charged during periods of lower electricity demand, typically during the day when the full capacity of the solar farm is not required by demand on the network. The stored energy can be discharged during periods of high or peak demand, which is typically in the early evening. The energy storage units may also be charged by taking excess electricity from the grid at periods of very low demand, typically overnight from energy sources other than the Development, to be released at times of higher demand, this provides a management service to the network.

3.2.6 The Development will connect to the electricity network via the National Grid Substation at Wylfa. The route is shown in Figure 1.1, and the connection will be provided by underground cabling located within the adopted highway of local roads.

3.3 Temporary Construction Compounds

3.3.1 During the construction phase, a construction compound will be set up within the Site, near to the main site access at Chawaen Bach Farm which will serve the Development, thus reducing the distance delivery vehicles will need to travel after reaching the Site's entrance.

3.4 Operation

3.4.1 The Development has a modelled operational lifespan of 40 years. During the operational phase, the activities on-Site would comprise maintenance activities, including servicing of plant and equipment and vegetation management.

3.5 Decommissioning

3.5.1 Given the Development's modelled operational lifespan of 40 years, it comprises a long-term, temporary development. Following cessation of energy generation and exportation at the Site, and as part of the contractual obligations with the landowner, the above ground elements would be decommissioned and removed from the Site. It is anticipated that decommissioning of the Development would be controlled by planning condition.

4 Alternatives

4.1 Overview

4.1.1 Under the EIA Regulations an ES is required to provide a description of the reasonable alternatives studied by the Applicant.

4.1.2 The form of the Development has been influenced by a range of factors, including location, surrounding uses and landscape character, environmental impact assessment and input from IACC, Natural Resources Wales (NRW), Cadw, Dŵr Cymru and other statutory consultees and stakeholders.

4.2 The 'do nothing' Alternative

4.2.1 The 'do nothing' alternative refers to the option of leaving the Site in its current state and the Development would not be progressed. In this scenario, the existing configuration of the land would remain the same in the form of agricultural fields that are predominately used for grazing purposes. As such, the significant impacts both adverse and beneficial that are highlighted in this ES would not occur. The generation of solar energy is one of the key elements towards the UK achieving net zero carbon. Under current legislation and policy, the UK Government is obligated to reduce carbon emissions and is legally bound to achieve net zero carbon emissions by 2050. These obligations underpin the need for renewable energy, such as solar. The Development will have an export capacity of approximately 160MW. Should the Development not be taken forward, its energy-generating potential and potential carbon savings would not be recognised. The 'do nothing' alternative would result in the loss of the generation of this renewable energy.

4.3 Consideration of Alternative Locations & Uses

4.3.1 The Development must be located near to an existing grid connection to ensure that a viable development capable of generating renewable electricity that can be exported to the grid can be realised. The Applicant has a Bilateral Connection Agreement and Construction Agreement with National Grid which allows for the connection of a solar and battery project to the point of connection at the Wylfa nuclear substation. This agreement secures the capacity available on the grid at the substation for a fixed period of years for this form of generation. The Site has been considered acceptable for the Development following the site selection assessment upon when the Applicant undertook a rigorous assessment of land available in close proximity to the point of connection that balanced both environmental constraints and the ability to deliver a large-scale solar facility, consistent with the opportunity provided by the existing point of connection and agreement. The process involved a review of land availability and suitability in the area surrounding the point of connection, a selection and assembly of land and refinement of land to produce the Site. It is clear from national policy that renewable energy is urgently required and is supportive of renewable energy development including solar.

4.4 Consideration of Alternative Designs

4.4.1 Within the original Site boundary, representing all land within the land assembled, the area and layout was initially defined based on the optimal solar PV arrangement considering the most efficient layout and orientation within the land holding that would maximise the output of the solar farm within the land assembled. From this position, the Site boundary and Development was refined, considering environmental constraints and opportunities. Numerous iterations to the Site layout, and more generally to specific elements of the design, have occurred as the Development has evolved since submission conception.

4.4.2 The early layout iterations for the Development were prepared without inverters, access roads and associated infrastructure to allow for subsequent design inputs and amendments resulting from feedback from the consultant team, consultees and design team. The additional plant and equipment were added later in consideration of opportunities and constraints specific to the location of associated infrastructure (i.e. visual, noise or access). The Site boundary was considered and amended to reduce impacts of the Development, including consideration of opportunities and constraints. The local

environment, and the character of the surrounding area and landscape, have informed the design of the Development inclusive of the embedded mitigation incorporated into the design.

4.4.3 Early plans for the Development were progressed between March 2021 and August 2021 and revised in March 2022. Examples of the changes to the Site boundary include changes (reduction) in the total Site extent, inclusion of the grid connection route, inclusion of landscape margin and internal cable route and removal of fields from development. Examples of the changes to the Development include relocation of the battery energy storage system and substation compound, adjustment to panel offsets and buffers for landscape, ecology, residential amenity and other technical design constraints. These changes also included the removal of fields from development and adjustment of the internal arrangements (notably fence line and access roads). The layout was amended to achieve opportunities identified and address findings of studies/reports prepared including residential amenity and, where possible, addressing consultee and public comments made during the July 2021 and July 2023 informal community consultations held.

5 Construction Methodology and Phasing

5.1 Overview

5.1.1 Planning for construction is broad at this stage and may be subject to modification. The assessment of construction phase environmental effects is based on reasonable assumptions and experience.

5.1.2 It is anticipated that the construction phase of the Development would last approximately 12 months (52 weeks), subject to gaining planning permission. Construction is anticipated to commence in 2025 and it is expected that the Development will be completed in 2026.

5.1.3 The Development will have a design life of 40 years. It is therefore anticipated that decommissioning of the Site could occur from 2067.

5.2 Construction Activities

5.2.1 The main construction activities for the Development would include:

- Site establishment and preparation for construction (access, fencing, ground preparation, preliminary civil works and drainage);
- Installation of the simple metal framework pile into the ground;
- Installation of underground cabling (trenching) and installation of inverters/transformers;
- Construction of the BESS Facility and substation; and
- Construction of temporary construction facilities (temporary staff amenities and offices).

5.2.2 The construction of the solar farm element of the Development would include the preparation of the Site, installation of the access tracks, erection of security fencing / CCTV, assembly and erection of the solar PV arrays, and the installation of the inverters/transformers and grid connection and underground cables.

5.2.3 The construction of the BESS Facility element of the Development would include the preparation of the Site, installation of the access roads, erection of security fencing, assembly of the battery system, and installation of the switch-room and grid connection.

5.2.4 The construction of the grid connection element of the Development would comprise trenching within the existing public highway from the Site to the National Grid substation at Wylfa.

5.2.5 Off-Site passby bays would be implemented during the construction phase but would require ‘no-dig’ construction.

5.3 Construction Traffic

5.3.1 During the construction phase, vehicle movements will be managed to minimise the impact on the local road network. HGV movements would be dispersed across the working day outside of the morning and evening peak periods, where possible.

5.3.2 Construction routes to the Site would be reviewed in detail and agreed as part of a plan for the management of construction traffic to be agreed with IACC.

5.4 Hours of Work

5.4.1 Working hours on the Site would be agreed with IACC. However, it is likely that standard hours of work to be adhered to would be:

- Monday to Friday, 8am to 6pm;
- Saturday, 8am to 1.30pm; and
- Sundays and Bank Holidays, no non-noisy activities on-Site.

5.4.2 All works outside these hours will be subject to prior agreement of, and/or reasonable notice to IACC, as appropriate. Night-time working will be restricted to exceptional circumstances. By arrangement, there may be some out of hours construction deliveries made to the Site.

5.5 Environmental Management

5.5.1 In addition to the construction traffic management plan, a Construction Environmental Management Plan (CEMP) would be prepared for the Development. This is a document that would provide methods for managing environmental issues, such as noise and dust during construction. Measures would include details of prohibited or restricted operations (location, hours etc.) and the mechanism for the public to register complaints and the procedures for responding to such complaints.

6 Cultural Heritage

6.1 Overview

6.1.1 The ES has assessed the likely significant effects of the Development with respect to Cultural Heritage.

6.2 Baseline Conditions

6.2.1 There are several prehistoric monuments are recorded within a 2km radius of the Site boundary. These comprise Bronze Age burial mounds (including the Scheduled Monument of Cors-y-Bol Round Barrow, which lies adjacent to the north-western boundary of the Site), numerous Bronze Age standing stones, possible Bronze Age burnt mounds, Iron Age hillforts (including the Scheduled Monument of Y Werthyr, which lies approximately 1.2km to the west of the Site), and possible Bronze and/or Iron Age settlement and associated stock enclosures and field systems.

6.2.2 Majority of the monuments recorded within a 2km radius of the Site boundary are of post-medieval and modern data and compromise archaeological sites and farm buildings.

6.2.3 There are no designated historic assets located within the Site. The known non-designated assts include the following:

- A cluster of features in the western part of the Site (Fields 11 and 12)
- An untested circular trench in the northern part of the Site (Field 28)
- The greatest archaeological interest is located in a series of small enclosures and holes for fences in the central part of the Site (Fields 30, 31, 32 and 33);
- Other pits and holes for fences in other locations across the Site (Fields 11, 12, 15, 17, 21, 22, 23, 27, 38 and 63);
- Ditches representing former field boundaries and drainage features associated with historic land management across the Site; and
- The ruins of Tyddyn-bâch, which appears to have been built sometime between 1844 and 1889, in the eastern part of the Site (Fields 57 and 58).

6.3 Construction Phase Effects

6.3.1 Archaeological evaluation work (comprising a geophysical survey[2] and trial trenching) has been undertaken at the Site. Although this evaluation work identified archaeological remains at the Site, none of these archaeological remains were considered to be of a significance equivalent to that of a designated historic asset. During the construction phase, there is a potential loss of archaeological remains in Field 28 and loss of the enclosure of the prehistoric or medieval date in Fields 30-33. This effect is not considered significant, but mitigation measures will be incorporated, including strip, map and record excavation, above-ground design solutions and exclusion of development. Similarly, within Fields 30-33 there is a risk of loss of historic ditches, which although non-significant, will be mitigated through archaeological monitoring during the trenching of cables for the Development.

6.3.2 There will be a non-significant effect of loss of archaeological remains in Fields 15, 17, 21, 22, 23, 27, 28 and 63 which will be mitigated through strip, map and record excavation within areas centred around the remains. Prior to construction ground works, strip, map and record excavation will be completed in the event there are buried archaeological remains in the proposed areas of the battery energy storage system and substation within the Site. It is also possible there will be archaeological remains buried

[2] Geophysical survey is used to create maps of archaeological features beneath the ground.

within the proposed off-Site grid connection, and therefore archaeological monitoring of the cable trench will occur. Both of these effects will not be significant.

6.4 Operational Phase Effects

6.4.1 A small part of the Site contributes through setting to the significance of the Scheduled Monument of the Cors-y-Bol Bronze Age burial mound, which abuts the western part of the Site boundary. The Development's layout accommodates a 60m offset from the Scheduled Monument to the built Development edge. The introduction of the Development's solar PV arrays will not result in significant effects on the setting of the Scheduled Monument and no further mitigation is required. There is a potential for the setting to change of the Scheduled Monument Y Werthyr which lies 1.2km west of the Site. Although no mitigation is required and the effect is not significant as there are no clear views of Y Werthyr from the Site.

7 Landscape and Visual Effects

7.1 Overview

7.1.1 The ES has assessed the likely significant effects of the Development with respect to Landscape and Visual Effects.

7.2 Baseline Conditions

7.2.1 The Site is located within National Landscape Character Areas 2: Central Anglesey which has the characteristics of rural, enclosed farmland and calm in feel. County Landscape Character Areas (LCA) in which the Site is located within include LCA 5: North West Anglesey and LCA 17: West Central Anglesey. LCA 5 is defined by open landscape, drumlin fields and historic association of windmills. LCA 17 is defined as open landscape, rolling land form and the agricultural heartland of the Isle of Anglesey. The Site is additionally located within two visual and sensory aspect areas (AA) including North-West Drumlins AA and Central Smooth Belt AA. Llynerchymedd AA is to the east of the Site. As shown on Figure 7.1, there are no landscape designations or designated features within the Site. There are six Public Rights of Way (PRoW) that run through or adjacent to the Site including PRoW 25/024/3, 25/023/1, 25/027/1, 27/039/1, 47/038/1 and 25/028/1. National Cycle Route 5 (NCR 5) runs adjacent to the Site boundary.

7.3 Construction Phase Effects

7.3.1 The construction phase of the Development may give rise to significant effects on landscape features, landscape character and visual amenity. The Construction Environmental Management Plan will implement mitigation, although the resulting effect will still remain significant.

7.4 Operational Phase Effects

7.4.1 During the operation of the Development, there is expected to be moderate adverse to minor beneficial significant effects on landscape features. There is also expected to be major to moderate adverse effects on landscape character and moderate adverse to neutral effects on visual amenity, which are also considered significant. To address these significant effects, the Development will incorporate planting and management and maintenance of vegetation and features as appropriate as addressed in the Landscape and Ecological Management Plan (LEMP). The LEMP will provide a long-term landscape management and maintenance approach to landscape aspects. This will result in a moderate adverse to moderate beneficial effect on landscape features, which is considered significant. There will be a result of minor adverse to minor beneficial effect on landscape character and minor adverse to neutral effect on visual amenity, which are both considered insignificant.

8 Biodiversity

8.1 Overview

8.1.1 The ES has assessed the likely significant effects of the Development with respect to biodiversity.

8.2 Baseline Conditions

8.2.1 The Nantanog geological SSSI is designated for its nationally important geological exposure and is located within the Site boundary, however, the Development area is on either side of the SSSI, outside of the SSSI boundary. The Site is also approximately 415 metres south of Llyn Alaw, which is designated as a SSSI. Two further SSSIs are located in close proximity to the Site; Tyddyn Grrfer (a geological SSSI) and Llyn Llywenan are located 1.7km south and 1.6km south-west of the Site, respectively.

8.2.2 A Local Wildlife Site (LWS), Cors-y-Bol, is present adjacent to the western boundary of the Site. Additionally, two other LWSs are present proximate to the Site; Tir Pori Traian, located adjacent to the north-eastern corner of the Site and Cors Tre'r Ddol LWS, located approximately 1km south of the Site.

8.2.3 The majority of the Site is grazed pasture. The fields boundaries are typically formed by hedgerows. Small patches of woodland and trees occur infrequently and streams, ponds and wet ditches are also located within the Site. Habitats within the Site are of ecological importance at the Site or local level, with the exception of a shallow pool at Nantanog which is regularly used by birds in winter that is of county level ecological importance.

8.3 Construction Phase Effects

8.3.1 No significant effects on the Nantanog (geological) SSSI are anticipated during the construction phase. Its interest features will be protected by a 10m buffer area which has been agreed through consultation with NRW (with the exception of a very short section of access track at the west tip of the SSSI, which is outside the SSSI but within the 10m buffer).

8.3.2 The Development will involve the installation of solar PV panels on either side of the shallow pool at Nantanog. A buffer has been incorporated into the Development's design to include both the shallow pool and the retention of a 50m-wide margin of grassland (grazed, improved grassland) around it, before the site fence. There will also be an area between the fence and the solar PV panels (5-10m wide) that will not be developed, meaning that approximately 55-60m of grassland habitat will be retained within the Development around the shallow pool. The designed mitigation is intended to minimise habitat loss and ensure the continued use of the shallow pool by birds. The buffer distance has been derived in response to consultation with NRW.

8.3.3 Additionally, to avoid disturbing the birds in winter, construction work in the vicinity of the shallow pool will be undertaken in the summer months (between April and late September). Therefore, neutral effects on wintering birds are anticipated as a result of these mitigation measures. No significant effects have been identified on other protected species (such as Great Crested Newt) either as a result of the Development's construction phase.

8.4 Operational Phase Effects

8.4.1 Neutral effects are also anticipated on wintering birds during the Development's operational phase by ensuring that maintenance activities in the vicinity of the shallow pool at Nantanog are timed to minimise the risk of disturbance. Although significant effects on other protected species are not expected, measures set out in the Landscape and Environmental Management Plan for the Development, such as scrub management for the Nantanog (geological) SSSI and the creation of new ponds and terrestrial habitats for Great Crested Newt will be implemented during the operational phase.

9 Water Environment

9.1 Overview

9.1.1 The ES has assessed the likely significant effects of the Development with respect to the water environment.

9.2 Baseline Conditions

9.2.1 A number of watercourses and ponds are located throughout the Site. These include Tafarn Brook, which is a 'main river' and Pennant Brook and Carmel Brook, which are 'ordinary watercourses', as shown on Figure 9.1.

9.2.2 The majority of the Site is located within fluvial Flood Zone A[3]. There are limited areas along the western boundary and north-eastern corner located in fluvial Flood Zone B. A very limited area along the western boundary is located in Fluvial Flood Zone C2, associated with Cors Y Bol.

9.2.3 According to NRW long term flood risk mapping, the Site is not considered to be at risk from tidal flooding. The majority of the Site has a very low surface water flood risk, with limited areas of up to a high surface water flood risk associated with the ordinary watercourses within the Site.

9.2.4 The Site is located within the Dŵy Cymru Welsh Water Drinking Water Catchment known as 'Llyn Alaw' (associated with the Llyn Alaw Reservoir located approximately 415 north of the Site.

9.3 Construction Phase Effects

9.3.1 Negligible effects on external flood risk and the potential remobilisation of existing contamination on surface water (Llyn Alaw Reservoir) and groundwater are expected during the Development's construction phase. Following the implementation of mitigation measures in compliance with BS6031:198 'The British Standard Code of Practice for Earthworks', which details best practice methods that should be considered for the general control of drainage on construction sites, effects resulting from increased surface water runoff rates will be negligible. Similarly, measures set out the CEMP for the Development, such as ensuring that oil interceptors will be regularly inspected, cleaned and maintained and construction vehicles will be maintained appropriately, will be implemented that will result in negligible effects arising from general construction activities on surface water and groundwater.

9.4 Operational Phase Effects

9.4.1 During the operational phase, due to an appropriately designed surface water drainage strategy and the use of double skinned fuel and oil tanks located within the units, the Development will result in negligible to minor beneficial effects on contamination from accidental or process discharges on surface water and groundwater. The implementation of the appropriately designed surface water drainage strategy will also reduce runoff rates when compared to the existing Site, and as there will be an absence of typical farming activities, such as ploughing and soil compaction by heavy machinery during the Development's operational phase, the effect on the risk of the increase in surface water runoff rates from the Development is considered to be negligible to minor beneficial.

9.4.2 The design of the Development has incorporated a minimum 8m buffer from 'main rivers' and a 3m buffer from 'ordinary watercourses' and therefore negligible effects are anticipated on these watercourses. It has also ensured that infrastructure is located away from flood risk areas or

[3] According to Natural Resources Wales's Technical Advice Note 15, fluvial Flood Zone A is considered to be at little or no risk of fluvial or tidal/coastal flooding; Zone B is defined as areas known to have been flooded in the past, evidenced by sedimentary deposits; Zone C is based on the extreme flood outline, equal to or greater than 0.1% Annual Exceedance Probability (AEP; river, tidal or coastal); Zone C1 is defined as areas of the floodplain which are developed and served by significant infrastructure, including flood defences and Zone C2 is defined as areas of the floodplain without significant flood defence infrastructure.

appropriately raised above the flood levels, and therefore negligible effects on the risk of external flooding are expected during the operational phase.

10 Transport and Access

10.1 Overview

10.1.1 The ES has assessed the likely significant effects of the Development with respect to transport and access.

10.2 Baseline

10.2.1 The following traffic routes are located in close proximity to the Site; A55, B5112 and an unnamed access road between the B5112 and the Site. The A55, also known as the North Wales Expressway, is the main road in North Wales, connecting Chester to Holyhead. For most of its extent, it is a dual carriageway. The B5112 connects the A55 to the Site. The B5112 is rural in nature, but for the majority of its length, it is wide enough for vehicles to pass. There are some areas of narrowing, particularly to the south of Trefor. The B5112 is regularly used by large agricultural vehicles. The Site Access Approach is a narrow road which is rural in nature. The route has a low baseline traffic flow, which includes agricultural vehicles.

10.2.2 There are limited public transport options due to the rurality of the Site. Bus stops are located in Carmel to the east of the Site. The nearest train station is in Valley, approximately 12.5km to the southwest of the Site from the southern edge of the Site boundary.

10.2.3 There are no formal cycleways within the Site. However, NCR 5 runs along part of one of the unclassified roads that route through the Site. There are also PRoWs located within the Site.

10.3 Construction Phase Effects

10.3.1 The construction phase of the Development would result in temporary increases in HGV movements on the highway network around the Site. There would be vehicle trips to and from the Site associated with construction workers.

10.3.2 Negligible effects are expected on road user safety, severance of communities, driver and pedestrian delay, non-motorised user delay and on hazardous loads. Following the implementation of mitigation measures set out in the Construction Traffic Management Plan (CTMP), such as putting in place traffic management along the B5112 to support HGVs through narrower sections of the network where the provision of passing areas is not possible, there will also be negligible effects on non-motorised user amenity (including fear and intimidation).

10.4 Operational Phase Effects

10.4.1 Operational phase activities, comprising site maintenance, will result in negligible effects on road user safety, severance of communities, driver and pedestrian delay, non-motorised user delay and amenity (including fear and intimidation), and hazardous loads from the Development.

11 Air Quality

11.1 Overview

11.1.1 The ES has assessed the likely significant effects of the Development with respect of air quality.

11.2 Baseline Conditions

11.2.1 The Y Werthyr SSSI is the only designated ecological site within 200m of any roads which have been identified to be used by the Development's construction vehicles (as shown on Figure 11.1). It includes fen and grassland habitats. There are no European or internationally designated sites within the study area for the assessment.

11.3 Construction Phase Effects

11.3.1 Construction traffic emissions on the Y Werthyr SSSI during the Development's construction phase will result in negligible air quality effects on the designated ecological site.

11.4 Operational Phase Effects

11.4.1 No likely significant effects have been identified during the operation of the Development and therefore the Development's operational phase has been scoped out of the assessment of air quality effects.

12 Noise and Vibration

12.1 Overview

12.1.1 The ES has assessed the likely significant effects of the Development with respect of Noise and Vibration.

12.2 Baseline Conditions

12.2.1 The prevailing background noise conditions in the area have been determined by an environmental noise survey conducted during both daytime and night-time periods between Thursday 18th and Wednesday 24th March 2021.

12.2.2 The survey was undertaken during the Covid-19 pandemic, and therefore road traffic movements were reduced, giving the dataset used to derive the background sound level a high degree of statistical robustness. The installation of the survey was overseen by an Environmental Health Officer from IACC.

12.3 Construction Phase Effects

12.3.1 During the construction phase, although significant construction noise effects are not anticipated, 'Best Practicable Means' will be implemented through the CEMP for the Development, such as using 'silenced' plant and equipment and fitting acoustic enclosures to suppress noisy equipment, as appropriate.

12.3.2 The separation distances between the closest construction works and the closest residential receptors, coupled with the low-intensity nature of the construction works, would ensure that construction vibration impacts on these receptors would be no greater than negligible.

12.3.3 Although the Development will involve micro-piling for the solar PV frame legs, this will give rise to vibration levels that are sufficiently low so as to ensure that effects are perceptibly insignificant beyond 10m from the source. Consequently, although appropriate offset distances will be adopted to prevent any direct disturbance of the Nantanog geological SSSI, no specific mitigation measures will be required given this piling technique's low level of vibration generation, thus ensuring no vibration impacts on the SSSI would occur.

12.4 Operational Phase Effects

12.4.1 Operational noise from the Development will result in negligible effects on residential receptors during both the daytime and nighttime periods. Notwithstanding this, a noise limiting planning condition attached to the consent for the DNS would be implemented.

13 Agricultural Land

13.1 Overview

13.1.1 The ES has assessed the likely significant effects of the Development with respect to Agricultural Land.

13.2 Baseline Conditions

13.2.1 The predictive Agricultural Land Classification (ALC) map shows the Site as mostly subgrade 3a with areas of Grade 2. Grades 1, 2 and 3a are defined as best and most versatile (BMV) agricultural land. A detailed ALC survey was carried out in April 2021. This covered a slightly larger area than is now included within the Site. The detailed survey determined that approximately half of the area surveyed (122.3ha or 45.5% of the area) is classified as Subgrade 3a agricultural land. Approximately one-third (87.5ha or 32.6% of the area) is classified as Subgrade 3b agricultural land. There are smaller proportions of Grade 2 (36.7ha or 13.7% of the area) and Grade 4 (6.5ha or 2.4% of the area) agricultural land also present. The remainder of the land within the area is classified as non-agricultural uses, i.e., woodland, roads, buildings (7.2ha or 2.7% of the area) and land within the adopted highway of local roads for the Development's underground cabling connection to the National Grid Substation at Wylfa (8.6ha or 3.2% of the area). There are four farm businesses farming land within the Site.

13.3 Construction and Operational Phases Effects

13.3.1 During construction and operational phases, potential effects have been identified which may give rise to significant effects. The temporary loss of BMV land and temporary loss of poorer quality land from sealing or downgrading of soil have been identified, which have been assessed to have a significance of minor adverse prior to mitigation. Following the implementation of the Soil Management Plan to ensure that the soil is successfully restored to its previous grade and quality, a negligible effect has been assessed for the temporary loss of poorer quality land and minor adverse for the temporary loss of BMV land.

13.3.2 The permanent loss of BMV land has also been identified as a potential effect as a result of the Development and has been assessed to have minor adverse significance in the absence of mitigation measures. No mitigation has been identified, therefore the residual effects of the permanent loss of BMV land has been assessed to be minor adverse.

13.3.3 The structural damage to high clay soils has been identified, the significance of the effect has been assessed to be minor adverse in the absence of mitigation measures. The implementation of the Soil Management Plan has been identified as appropriate mitigation; however, the residual effect remains minor adverse.

13.3.4 Additionally, the potential effect of farm businesses and soils during the operational phase has been identified through the assessment and has been assessed to have a significance of minor adverse and negligible, respectively. No mitigation has been identified therefore the residual effects have been assessed to minor adverse and negligible for farm businesses and soils during operation.

14 Summary and Residual Effects

14.1 Overview

14.1.1 An ES including this Non-Technical Summary has been prepared to support a accompany an application for a DNS for a ground-mounted solar photovoltaic farm, with a generating capacity of approximately 160MW and a BESS Facility, together with associated infrastructure on land to the west of the B5112 and to the south of Llyn Alaw at Llantrisant, Anglesey.

14.2 Residual Significant Effects

14.2.1 The Development will result in the following significant beneficial residual effects:

- Moderate beneficial effects on landscape features during the operation phase.

14.2.2 The Development will result in the following significant adverse residual effects:

- Moderate adverse effects on landscape features, landscape character and visual amenity during the construction phase; and
- Moderate adverse effects on landscape features during the operation phase.

15 Cumulative Effects

15.1 Overview

15.1.1 The ES has assessed the likely significant effects of the Development and cumulative schemes Maen Hir Solar and Energy Project and Carogg Ganol Battery Energy Storage System. Only landscape and visual effects are expected to be significant.

15.2 Construction

15.2.1 There are no significant beneficial cumulative effects have identified during the construction phase of the Development.

15.2.2 One significant adverse cumulative effect has been identified during the construction phase of the Development:

- Moderate adverse effect on visual receptors using NCR5, PRoW 22/027/1 and 47/038/1 and from Minor Roads near Maen Hir.

15.3 Operation

15.3.1 There are no significant beneficial cumulative effects have identified during the operation phase of the Development.

15.3.2 One significant adverse cumulative effect has been identified during the operational phase of the Development:

- Moderate adverse effect on receptors using PRoW 47/037/1 due to the Maen Hir Solar and Energy Storage Project

FIGURE 1.1
SITE LOCATION PLAN

KEY

Site Boundary

Revisions:
First Issue- 16/03/2022 JS

N

0 1km

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Top Floor, The Priory, Dursley, Gloucestershire, GL11 4HR
Tel: 01452 764685

Project Title:

Alaw Môn (Wylfa) Solar Farm

Drawing Title:

Site Location Plan - Overall

DRWG No:	Rev:	Sht No:
ENSO-11-01	-	1/4
Drawn by : JS	Checked by: RS	
Scale: 1:12,500 @ A0	Date: 16/03/2022	

KEY

Site Boundary

N

Revisions:
First Issue- 16/03/2022 JS

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Tel: 01452 764685

Project Title:
Alaw Môn (Wylfa) Solar Farm

Drawing Title:
Site Location Plan

DRWG No:	Rev:	Sht No:
ENSO-11-01	-	2/4
Drawn by : JS	Checked by: RS	
Scale: 1:5000 @ A0	Date: 16/03/2022	

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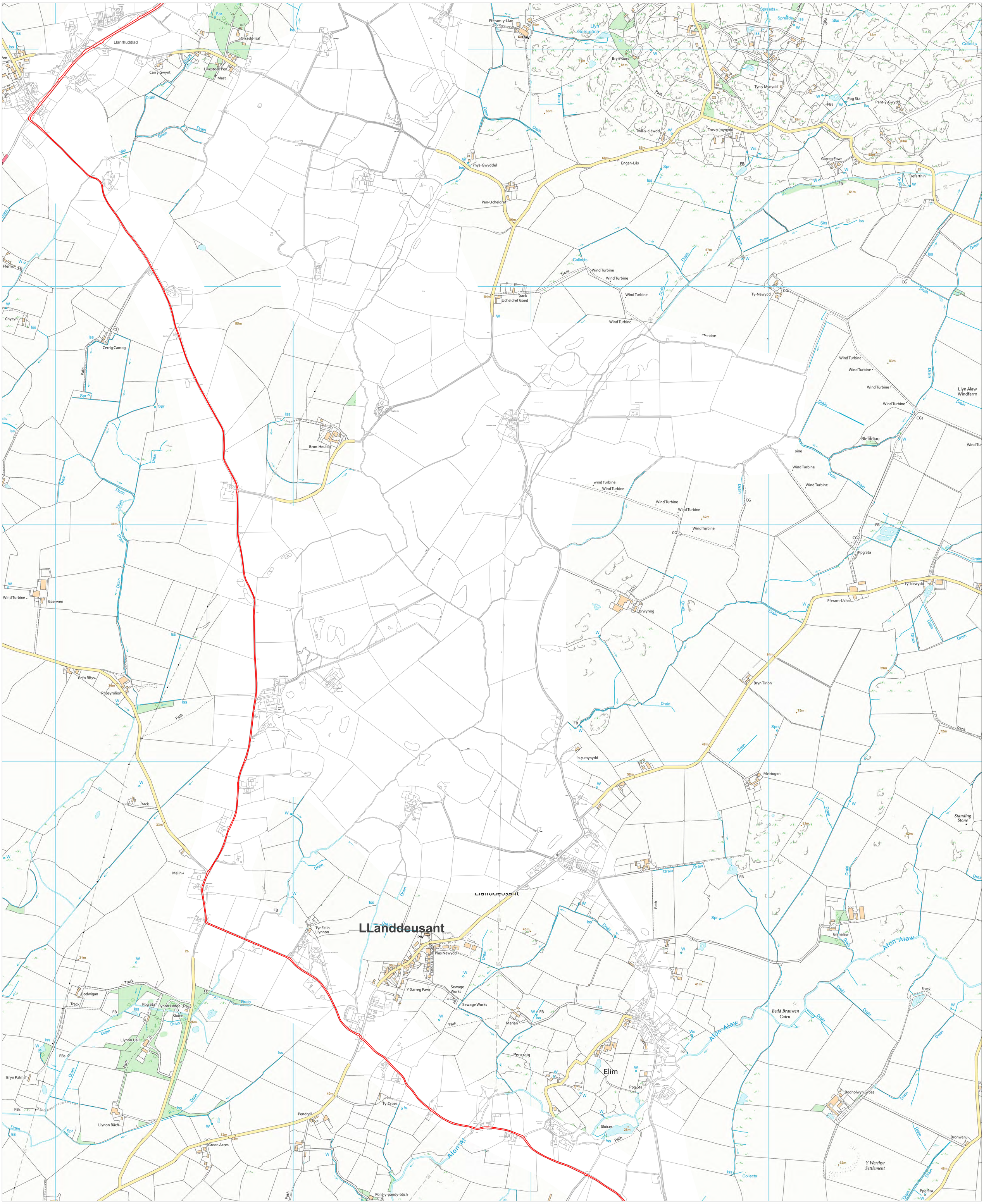

KEY

Site Boundary

Revisions:
First Issue- 16/03/2022 JS

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0 500m

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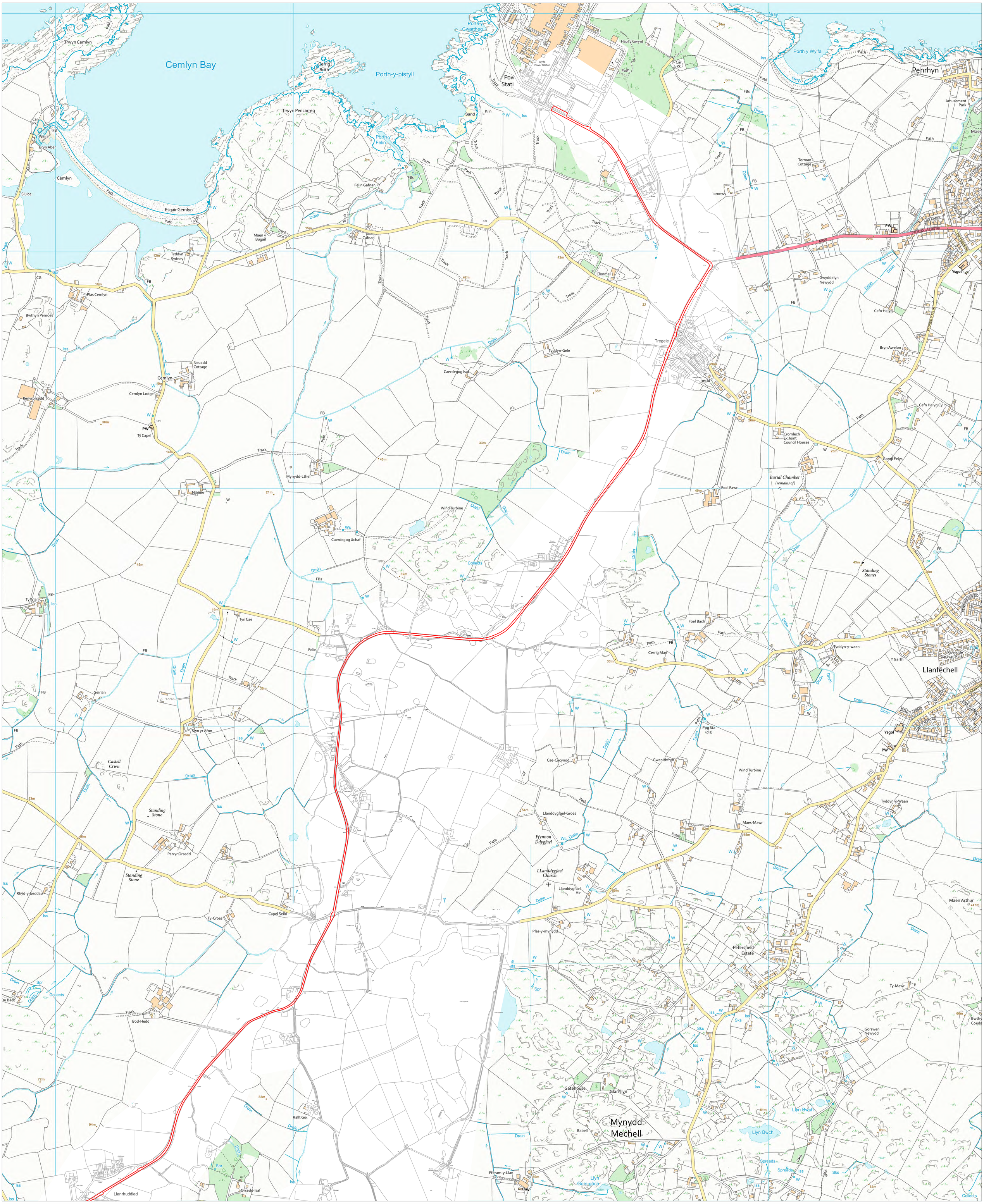
Project Title:
Alaw Môn (Wylfa) Solar Farm

Drawing Title:
Site Location Plan

DRWG No:	Rev:	Sht No:
ENSO-11-01	-	3/4
Drawn by : JS	Checked by: RS	
Scale: 1:5000 @ A0	Date: 16/03/2022	



KEY

Site Boundary

Revisions:
First Issue- 16/03/2022 JS

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0 500m

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Project Title:

Alaw Môn (Wylfa) Solar Farm

Drawing Title:

Site Location Plan

DRWG No:	Rev:	Sht No:
ENSO-11-01	-	4/4
Drawn by : JS	Checked by: RS	
Scale: 1:5000 @ A0	Date: 16/03/2022	

FIGURE 2.1
CUMULATIVE SCHEMES PLAN

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

Site Boundary

Cumulative Schemes:

Lightsource BP
Maen Hir Solar Farm and Energy Storage Project

Boom Power
Carrig Cemaes, Angelsey

FIGURE 2.1

Project
Alaw Môn Solar Farm, Anglesey

Drawing Title
Cumulative Schemes Plan

Date	Scale	Drawn by	Check by
23.02.2024	1:25,000 @A1 1:50,000 @A3	ML	HK
Project No	**Drawing No**		**Revision**
333100282	LN-E-01		A

0 200 400 600 1000m

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FIGURE 3.1
PROPOSED SITE LAYOUT

KEY

- Solar Panels
- Inverter
- Deer Proof Fencing
- Battery Fence
- Storage Container
- Battery Container
- Substation
- Battery Storage Facility Inverter/Transformer
- Control Room
- New Access Track
- Existing Track
- Overhead Lines
- Species Rich Grassland *(Refer to Landscape Strategy Plan)*
- Field Margin Planting *(Refer to Landscape Strategy Plan)*
- Gravel
- SSSI
- Public Right of Way

NOTE:
CCTV cameras to be added around the perimeter of each fence line. The placement and spacing will be in accordance with the manufacturer's specification. Cameras face internally within site.

N

0 500m

Revisions:
First Issue- 19/09/2023 JS

enso energy

Enso Energy Limited, Unit 1 & 2 Cirencester Office Park, Tetbury Road, Cirencester, GL7 6JJ
Tel: 01452 764585 Email: enquiries@ensoenergy.co.uk

Project Title:

Alaw Môn (Wylfa) Solar Farm

Drawing Title:

Proposed Site Layout

DRWG No:	Rev:	Sht no:
WAM-01-P02	-	-
Drawn by : JS	Checked by: OH	
Scale: 1:4000 @ A0	Date: 19/09/2023	

FIGURE 7.1
SITE CONTEXT PLAN

The scaling of this drawing cannot be assured

Revision	Date	Drn	Ckd
-	-	-	-

N

LEGEND

- Site Boundary
- Ancient Woodland #
- Existing Woodlands, Copses and Tree Belts ^
- Existing Scrub ^
- Existing Water Courses and Water Features ^
- Contours/Spot Heights (Metres AOD) ^ (110m)
- Public Rights of Way * (No.)
- Sustrans Cycle Route + (No.)
- Listed Buildings ~
- Scheduled Monument ~
- Sites of Special Scientific Interest #
- Special Landscape Area ^^ Mynydd Mechell
- Local Wildlife Sites

Sources:
^ OS Mapping
# Natural Resources Wales GIS Data Set
~ Cadw GIS Database
* Isle of Anglesey County Council GIS Data
+ Sustrans National Cycle Network GIS Data
^^ Review of Special Landscape Areas in Gwynedd and Anglesey, December 2012

Data collated for constraints and analysis mapping is based on publicly available sources at the time of preparation inserted using the British National Grid and may itself not be accurate. Stantec shall not be liable for the accuracy of data derived from external sources.

FIGURE 7.1

Project
Alaw Môn Solar Farm, Anglesey

Drawing Title
Site Context Plan

Date	Scale	Drawn by	Check by
25.10.2023	1:15,000 @A1 1:30,000 @A3	ML	FS
Project No	Drawing No		Revision
333100282	LN-LP-01		-

0m 400m 800m 1600m

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FIGURE 9.1
WATERCOURSE PLAN

N

Cors y Bol

Pennant Brook

Tafarn Brook

Carmel Brook

Carmel

Key

- Red Line Boundary
- Main River
- Ordinary Watercourse

Figure 2.1: **Watercourse Plan**

Client: **Wylfa Green Limited**

Project: **Alaw Môn Solar Farm**

Project No.: **C2208**

RMA ENVIRONMENTAL

Drawn:	Checked:	Date:	Scale:
RT	NY	04/10/2023	1:11,000@A3

FIGURE 11.1
DESIGNATED ECOLOGICAL SITES WITHIN 200m OF ROADS USED BY CONSTRUCTION VEHICLES

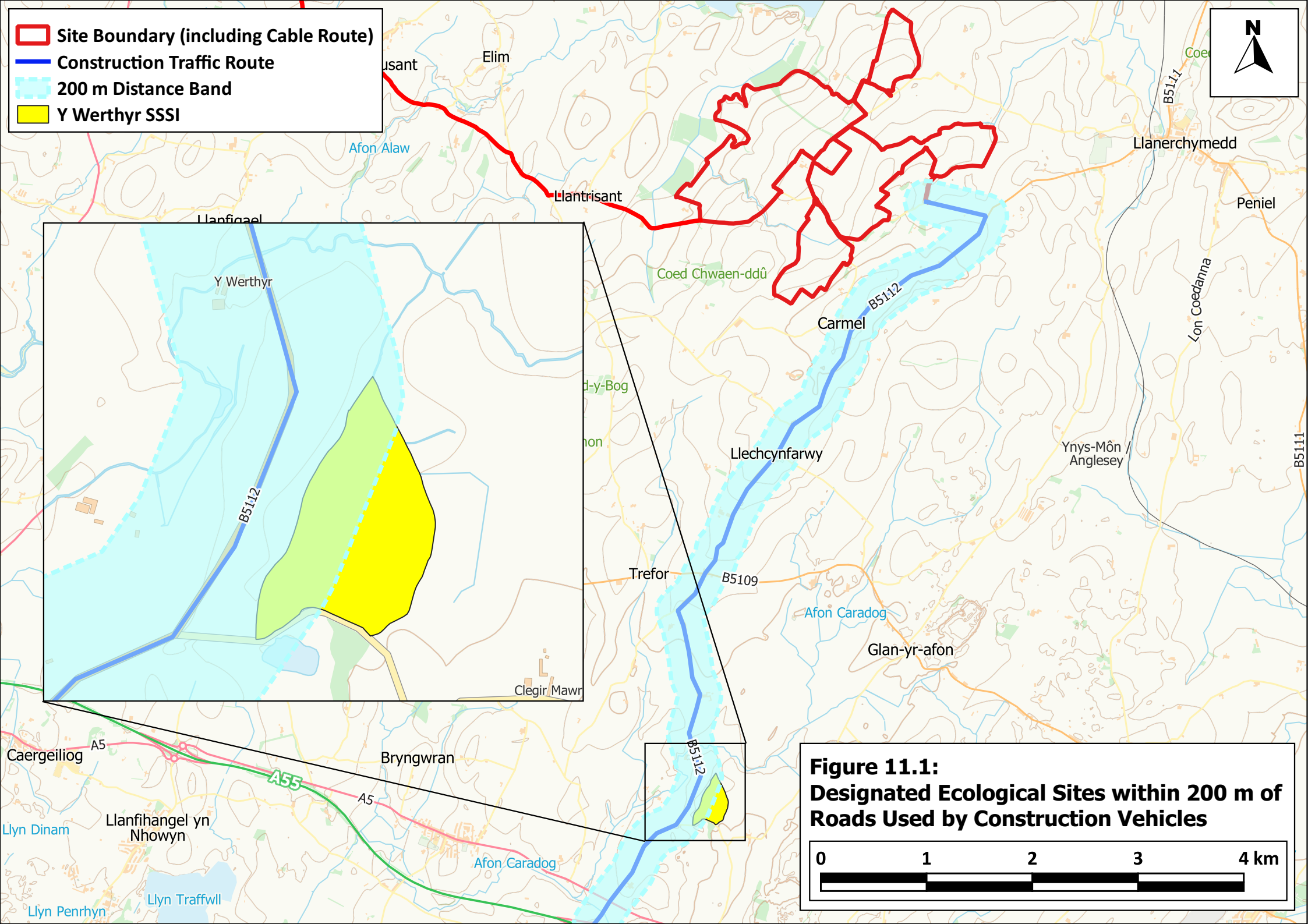

Figure 11.1:
Designated Ecological Sites within 200 m of Roads Used by Construction Vehicles