Glöyn Byw | Butterfly Solar Farm

Draft Outline Construction Environmental Management Plan

Prepared for

RWE Renewables UK

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3456-01-OCEMP

Document Control

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1.0 INTRODUCTION

1.1 Purpose of The Report

1.1.1 This document provides a draft Outline Construction Environmental Management Plan (CEMP) for Butterly Solar Farm (the Proposed Development).

1.1.2 An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development, and an Environmental Statement (ES) is being prepared in accordance with The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 [SI 2017 No. 567 (W.136)] ('the EIA Regulations'). In accordance with the requirements of the EIA Regulations, the ES will contain the assessment of the likely significant effects on the environment that may be caused during construction, operation and decommissioning of the Proposed Development, and will describe proposed mitigation measures.

1.1.3 This draft Outline CEMP accompanies an interim version of the ES for the Proposed Development, which has been produced to support statutory consultation on draft design proposals. The draft Outline CEMP demonstrates how the mitigation measures and monitoring requirements identified in the EIA process would be implemented, and has been prepared with the objective of compliance with the relevant legislation. This draft Outline CEMP has been produced at an appropriate level of detail for consultation, and it will be updated at the next stage of the Proposed Development design prior to the Development of National Significance (DNS) application being submitted.

1.1.4 Prior to commencing construction, a detailed CEMP would be produced by the appointed construction contractor for the Proposed Development, and this would be secured through an appropriate planning condition included within any consent. The CEMP would be required to be produced in accordance with Outline CEMP, with all measures, commitments and actions carried forward from the Outline CEMP. The measures proposed within the CEMP would also be agreed prior to commencement of construction works with the relevant stakeholders.

1.1.5 This draft Outline CEMP covers the principal construction activities envisaged at the time of preparing the ES, and has been used to incorporate embedded mitigation within the assessment process, as described in the ES. The Outline CEMP is

intended to be a live document, such that modifications and necessary interventions can be made following further information and advice from consultees.

1.2 Structure of the Draft Outline CEMP

1.2.1 The draft Outline CEMP is structured as follows:

i) Introduction: provides an introduction and overview to the Outline CEMP.
ii) The Proposed Development: this section provides a summary of the Proposed Development and the environment within which it is located.
iii) Construction Activities: Outlines the key aspects of the construction phase, including the plant used, the location of construction compounds and summary information on construction traffic.
iv) Project team roles and responsibilities: This section defines the roles which the construction contractor would identify within the CEMP to deliver the environmental commitments.
v) Commitments Register tables: this section identifies the environmental commitments to address the environmental effects of the works, including commitments to certain key items of embedded mitigation and essential mitigation.
vi) Details of maintenance and CEMP monitoring activities: this section provides procedures for monitoring and reviewing compliance with the CEMP and procedures for rectification of breaching or failings of CEMP measures.
vii) Induction, training, and briefing procedures for staff: this section provides a description of construction staff training procedures.

1.3 The Applicant

1.3.1 The Applicant is a market leading renewable energy owner/operator, with over 1 GW of solar and battery storage projects operational/in construction throughout the UK. The Applicant places a special focus on improving local biodiversity of sites, with an average biodiversity net gain of over 50% on its sites and has a strong record of engaging with and winning the support of local communities, who in turn help to shape their developments. As a result, they have a 98% success rate in planning.

1.3.2 The RWE group is the largest power producer in Wales, and the country's number one renewable energy generator. RWE are currently involved in over 3 GW of power generation in Wales across 12 sites, of which around 1 GW is renewable. The company's existing renewable energy portfolio already generates one third of Wales' renewable energy production – enough to power 550,000 homes. RWE plays a critical role in driving Wales' decarbonisation, working in partnership with Welsh Government and wider partner organisations. Through its past and future investments RWE is helping to create a clean, affordable and secure power system, which will act as the springboard to the decarbonisation of wider economic sectors across Wales, such as industry and transport.

2.0 THE PROPOSED DEVELOPMENT

2.1.1 The Applicant is seeking planning consent for the installation and operation of a renewable energy generating station comprising ground-mounted photovoltaic solar arrays and battery-based electricity storage containers together with 132 kV substation, hybrid inverter container compounds, site accesses, internal access tracks, security measures, access gates, other ancillary infrastructure and landscaping and biodiversity enhancements.

2.1.2 This solar photovoltaic electricity generating station (or 'solar farm') would have an export capacity of approximately 99.9 MW, with battery storage co-located strategically within the Site. The electricity generated would be enough to meet the needs of over 34,775 typical Welsh homes and result in an approximate saving of over 2.3 million tonnes of CO2, compared with generation from fossil fuels. The inclusion of batteries ensures the maximum efficiency of the Site, working with the electricity distribution system to enable surplus energy to be stored and released as needed, and provide vital balancing services to the grid network, avoiding intermittency of supply, and allowing a transition to a net zero renewable energy future.

2.1.3 The main components of the Proposed Development are:

i) Photovoltaic solar panels and associated support frames
ii) Hybrid Inverter Container Compounds including Battery Energy Storage Systems (BESS) containers, DC-DC converters and associated hybrid inverters
iii) Onsite electrical cabling
iv) An electrical substation compound (132kV) comprising a new substation and control building
v) Spare parts storage container(s)
vi) Wooden post deer/stock fencing
vii) In-ward facing infrared CCTV cameras on 3 m poles
viii) Landscaping and ecological enhancements
ix) Electrical cabling between the solar array areas
x) Electrical cabling to the National Grid Legacy Sub-Station

2.1.4 The point of connection to the National Grid would be via the Legacy Substation located adjacent to the Talwrn Water Tower to the north of Bronwylfa Road (the B5426), approximately 2.7 km to the northwest of the main solar farm area. The solar farm would connect to the substation via an underground electrical cable. The grid connection route would be approximately 4 km from the WAA. For the majority of this route, the underground cable would sit beneath the existing highways boundary. two potential grid connection options are under consideration.

2.2 Site Location and Description

2.2.1 The Site is located within the administrative area of Wrexham County Borough Council (WCBC). The location of the Proposed Development is shown on ES Figure 1.1.

2.2.2 The Site is divided into three principal areas referred to as the Western, Central and Eastern Array Areas (the WAA, CAA and EAA respectively), each of which is described below. Each of the array areas are separated by approximately 1.8 km and they would be connected to each other via underground cabling, which in turn would link to a main onsite substation located within the WAA. The application also includes an underground cable connection from the onsite substation to the Legacy National Grid Sub-Station, which is located approximately 1.3 km to the north of Rhosllannerchrugog.

2.2.3 The entirety of the Site covers an area of approximately 146 ha.

2.2.4 The OS grid references for each of the array areas are:

i) WAA – 331692, 346263
ii) CAA – 333959, 345629
iii) EAA – 336679, 346129

2.2.5 The Predictive Agricultural Land Classification (ALC) Map 2 classifies the majority of the Site as being Grade 3b and Grade 4 land, with small pockets of Best and Most Versatile (BMV) land present. A survey of the BMV land is reported within an Agricultural Land Classification Report which will be provided to accompany the planning application.

Western Array Area

2.2.6 The WAA covers approximately 21 ha and comprises agricultural fields bound by hedgerows, some of which contain mature trees. The WAA is located to the immediate east of the A483, approximately 1km to the east of Johnstown. There is a private road leading through the WAA which provides access from Hafod Road in the west (west of the A483) to a private residential dwelling, Hafod y Bont in the east. The road is also a Public Right of Way (PRoW), footpath RUA/119. This private road is not proposed as an access route into the WAA. Access would be gained into the WAA from the B5426 to the south.

2.2.7 The nearest residential property to the Site is Hafod y Bont, located adjacent to the eastern boundary of the WAA. The property is well screened in all directions by mature trees. The Hafod House Rest Home is located approximately 220 m to the west of the Site, to the west of the A483. The Hafod Industrial Estate is also located to the west of the A483, approximately 300m from the WAA boundary.

2.2.8 The Bonc yr Hafod Country Park is located 215 m to the west. Within the same area there is also the Stryt Las a'r Hafod Site of Special Scientific Interest (SSSI) and the Johnstone Newt Sites Special Area of Conservation (SAC).

2.2.9 There are a number of cultural heritage assets within the vicinity of the Site. The Grade II listed properties 'Hafod House' and 'Hafod House Farmhouse' are located approximately 220 m to the west of the Site and form part of the aforementioned Hafod House Rest Home. There is a Grade II listed 'Signpost at SW End' located approximately 715m to the north and there are two more listed buildings further north of the signpost. The Grade II listed 'Old Sontley Hall' is located approximately 1.2km to the east. The Wat's Dyke scheduled monument is located approximately 260m to the east of the WAA, which is also a PRoW and forms part of the Wat's Dyke Way Heritage Trail (footpath RUA/120 and MAR/41).

2.2.10 The NRW Flood Map for Planning shows that Site is at very low risk to flooding from seas and rivers. The Site is predominantly at very low risk to flooding from surface water and small watercourses.

Central Array Area

2.2.11 The Central Array Area (CAA) covers approximately 66ha and comprises agricultural fields bound by hedgerows, some of which contain mature trees. Marchwiel Hall Road runs up the centre of the CAA which would be used to access the CAA. The CAA is divided into four distinct parcels, two to the west of the Marchwiel Hall Road and two to the east. Narrow areas of woodland lie between and to the south of the two eastern parcels, these areas of woodland follow minor watercourses and the woodland is designated as Ancient Woodland. The areas of Ancient Woodland lie outside but adjacent to the boundary of the Site and are also locally designated wildlife sites. A number of ponds are also located within the CAA.

2.2.12 There are several properties close to the southern boundary of the CAA, to the north and south of the B5426. These properties form part of the settlement of Eyton. Eyton Primary School is also located in this area, to the south of the B5426. Residential properties are located along Marchwiel Hall Road and lie close to the boundary of the CAA. A golf course and the Plassey Holiday Park is located to the east of the CAA.

2.2.13 Bwgan Ddu Lane runs east west approximately 200m to the north of the CAA, the cable connection between the CAA and the Eastern Array Area (EAA) runs along Bwgan Ddu Lane, this route is described further below.

2.2.14 The Sontley Marsh SSSI and the Errdig Park Country Park are located approximately 1.35 km and 1.7 km to the north of the Site respectively.

2.2.15 There are a few cultural heritage assets within the vicinity of the CAA, the nearest of which are the Grade II listed ‘Former House at The Groves’ and ‘The Groves’, located along the eastern boundary of the northern part of the CAA. The Grade II listed ‘Kiln Farmhouse including former Malthouse to rear’ is located approximately 400 m to the north.

2.2.16 The NRW Flood Map for Planning shows the CAA is at very low risk to flooding from seas and rivers. The CAA is predominantly at very low risk to flooding from surface water and small watercourses, however, there are a small number of areas adjacent to the aforementioned watercourses which are shown to be a high risk from flooding from surface water and small watercourses.

2.2.17 No PRoW are located within the CAA. Footpath MAR/7 connects the B5426 with Marchwiel Hall Road and runs along a section of the southern boundary of the CAA.

Eastern Array Area

2.2.18 The EAA covers approximately 43 ha and comprises agricultural fields bound by hedgerows, some of which contain mature trees. An area of woodland, approximately 30m in width and 350 m in length, is located centrally within the EAA, this woodland is not designated as Ancient Woodland. Two blocks of Ancient Woodland are found adjacent to the boundary of the EAA, forming part of land associated with Gerwyn Hall. Kiln Lane, a minor road, forms the northern boundary of the EAA. This would be used to gain access into the EAA.

2.2.19 There are a number of residential properties located along Kiln Lane, on its northern side. The aforementioned Gerwyn Hall is located immediately to the east of the EAA. A residential property and commercial premises are located to the south of the EAA. The nearest settlement to the EAA is the village of Cross Lanes, approximately 850m to the northeast. The village of Bangor-on-Dee is located approximately 1.5km to the southeast.

2.2.20 The River Dee SSSI is located approximately 635m to the south, as is the River Dee SAC.

2.2.21 There is little presence of cultural heritage assets within the immediate vicinity of the EAA. The Grade II listed ‘Ivydale’ is located approximately 870m to the northwest.

2.2.22 The NRW Flood Map for Planning shows the majority of the developable area of the EAA is at very low risk to flooding from rivers, seas, surface water and small watercourses. Footpath SES/6 runs through the eastern most parcel of the EAA.

2.2.23 Footpath SES/9 runs along the southern boundary of the EAA and connects to footpath SES/6. There are a number of other footpaths within the vicinity of the EEA.

Electrical Connections

2.2.24 The Site includes the roads which connect the three solar array areas, within which cables will be laid to connect the solar farm to the main site substation, located in the WAA. The EEA would be connected to the CAA via the B5130 (Kiln Lane), Cockbank

Lane, Bwgan-Ddu Lane and Marchwiel Hall Road. The CAA would be connected to the WAA via Marchwiel Hall Road and the B5426.

2.2.25 The Site also includes the electricity connection from the solar farm substation in the WAA to the Legacy Substation. Two routes for this electricity connection are currently under consideration.

2.2.26 Collectively, the cabling proposed between the array areas, and also the two cabling route options between the proposed on-Site substation and the Legacy National Grid Substation, are termed the Cable Route.

2.2.27 The first of the route options for the connection between the on-Site substation and the Legacy National Grid Substation, the Northern Option, would route west along the B5426 from the WAA, before turning north along Hafod Road and Corkscrew Lane, to the junction with the B5605 (Wrexham Road). The cable would then cross Wrexham Road and proceed along Smithy Lane, before routing north along Talwrn Road and then west along the unnamed B5426 to Legacy Substation entrance road. The second option, the Western Option, would route west along the B5426 from the WAA towards Johnstown where it would turn north along the B5605 (High Street/Wrexham Road). It would continue north to the junction with Smithy Lane, and then follow the same route as the Northern Option from this point to Legacy Substation.

2.2.28 As such, the Cable Route runs adjacent to the aforementioned Johnstown Newt Sites SAC and Stryt Las a'r Hafod SSSI.

3.0 CONSTRUCTION ACTIVITIES

3.1 Construction Phase

3.1.1 The activities that are likely to be required for the construction of the Proposed Development are outlined below and it is anticipated that these activities would take place over several key phases:

i) **Enabling / preparatory works**. Preparatory works would be the first phase of construction and includes activities to enable and prepare the site for the construction of the Proposed Development.
ii) **Construction works**. Including solar panel and cable installation.
iii) **Landscape and habitat creation**. A programme of landscape and habitat reinstatement and creation will commence during the construction phase.
iv) **Commissioning**. The Proposed Development would go through a stage of testing prior to being commissioned and the first electricity generated and supplied to the National Grid. This is likely to involve mechanical and visual inspection of the Proposed Development, as well as electrical and equipment testing.

3.1.2 It is likely that a number of these activities and phases will run in parallel with works being undertaken on all of the array areas at the same time. Construction phasing will be confirmed in future iterations of the Outline CEMP and the CEMP produced by the construction contractor.

3.2 Construction Compounds

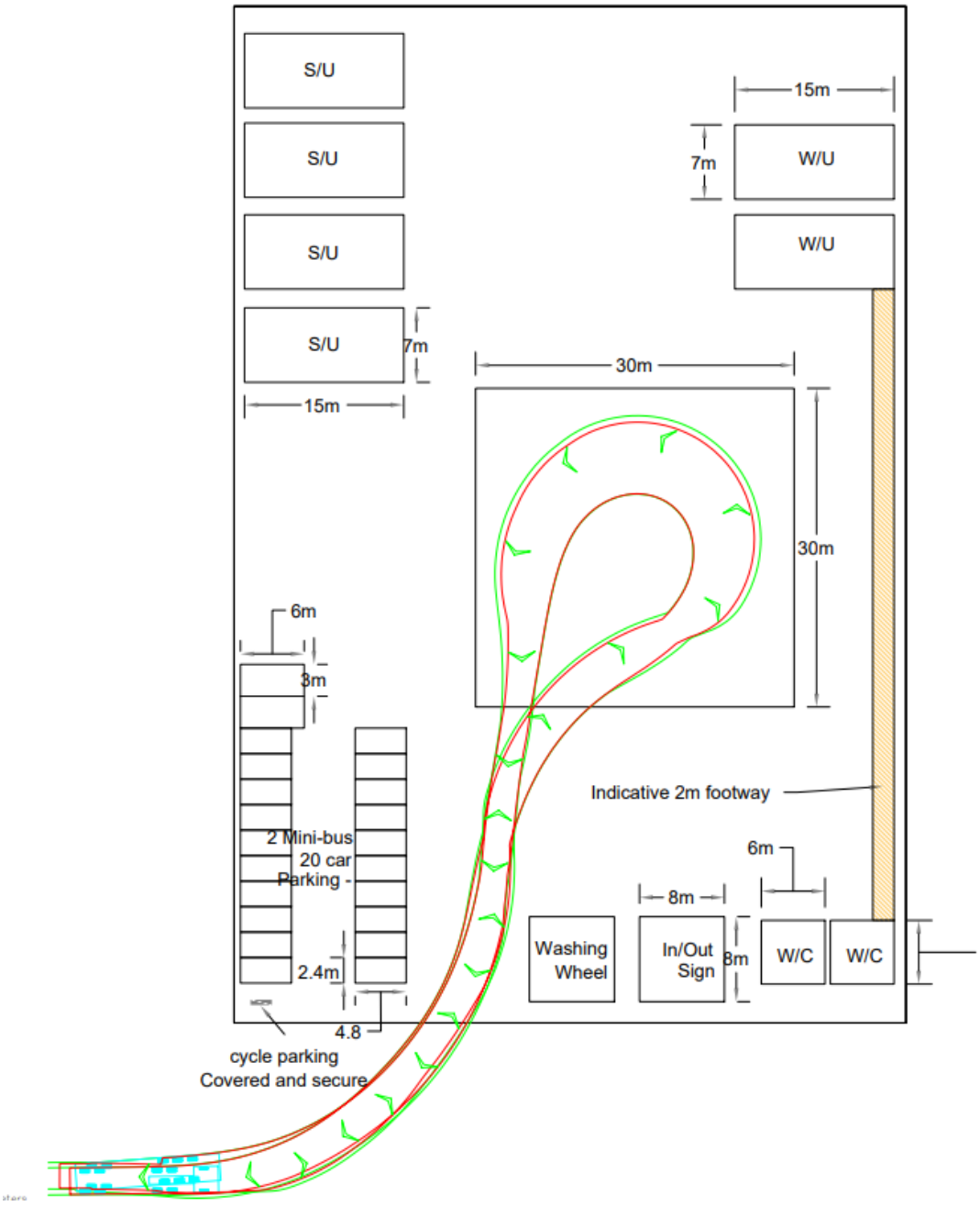
3.2.1 In order to reduce the impact of vehicles accessing the Site from local roads, construction compounds across the three array areas will be implemented. Vehicles delivering materials to the Site will be required to enter the Site and unload within the designated compound area.

3.2.2 The precise size, layout and location of the main construction compound / laydown areas and workers' vehicle parking would be a matter for the main construction contractor, who would not be appointed until after planning permission has been secured. Nonetheless, given the area available it is not considered that there are any

significant constraints to providing a suitable area(s) for staff welfare, parking, set-down and compound.

3.2.3 An indication of a typical site compound is shown below in Image 3.1, showing details of storage units (S/U), welfare units (W/U), and how vehicles may safely access this layout.

Image 3.1 – Indicative Configuration of a Construction Compound



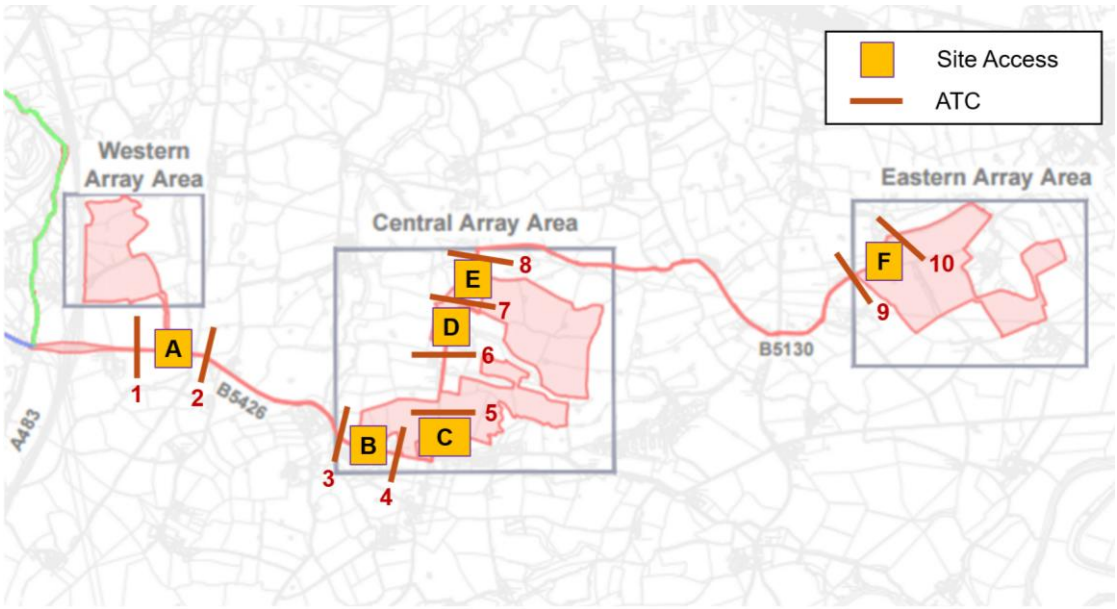
3.2.4 The temporary construction compounds would contain construction worker welfare facilities, a site office, limited parking, wheel wash area, plant and machinery storage, Heavy Goods Vehicle (HGV) / delivery turning area and waste storage areas.

3.2.5 For security and safety purposes, any live construction areas would be closed to the public throughout the construction phase. Site security staff would patrol the array areas in addition to hazard warning signs and CCTV.

3.3 Construction Access Points

3.3.1 The proposed Site access locations (A – F) are shown at Image 3.2. Each access would serve as both a construction and operational phase access to the respective array areas.

Image 3.2 – Proposed Site Access Locations



3.3.2 Full details relating to each Site access design, including matters relating to junction scale / form, visibility splays and swept path analysis are provided within the Transport Statement.

3.4 Construction Traffic Management

3.4.1 An initial Construction Traffic Management Plan (CTMP) has been prepared. The format of the CTMP is as follows:

i) **Site Context** – A description of the Proposed Development, the existing site and surrounding area and the local highway network.
ii) **Construction Programme** – An overview of the proposed construction schedule.
iii) **Construction Traffic Generation** – Reporting of the estimated volume and type of vehicles that will be generated throughout the construction phase of the development, and consideration of sustainable modes of travel for construction staff.
iv) **Site Access Arrangements and HGV Routing** – An overview of the associated construction access and routing scheme.
v) **Site Management Plan** – A description of the site management plan including mitigation measures to be adopted during the construction process concerning monitoring of vehicle access to the site and pollution control measures to be adopted.

3.4.2 The exact origination of development related HGV trips is uncertain at this stage and would be determined by the sourcing of materials and plant by the appointed contractor. HGVs would nonetheless be routed primarily along the Strategic Road Network (SRN), avoiding residential areas where possible and statutory limits on HGV movements (such as weight restrictions).

3.4.3 Construction traffic will route to all parts of the Site via the A483 Junction 2 (SRN) and the B5426. Access to the WAA will then be achieved directly from the B5426 with access to the CAA and EAA being via Marchwiel Hall Road (CAA) and the B5426 / A528 Overton Road / B5130 Kiln Lane (EAA).

3.4.4 All deliveries should be controlled by a delivery booking system which would distribute deliveries across the week and across working hours. Deliveries should not be accepted outside of their designated timeslot, and such deliveries would be asked to re-book, unless there is capacity to accommodate within the specified loading area.

3.4.5 It is anticipated that all deliveries to the Site will be organised to take place between the hours of 07:30 - 18:00, Monday to Friday and 08:00 - 14:00 on Saturdays. Deliveries are likely to fluctuate within the construction period, but it is envisaged that the majority of movements would be Monday to Friday with only a limited number of

movements on a Saturday. Deliveries will vary in amount per day during the construction period with an average of twelve deliveries (twelve inbound and twelve outbound movements) per day over the 39-week construction period.

3.4.6 The Applicant estimates that there may be up to a maximum of 80 staff on site per day. The Applicant's experience of similar developments elsewhere suggests that car sharing is prevalent within the construction industry and could reduce the number of cars on site to 20. This would be achieved through management of staff travel patterns and the use of minibuses, with a target of four people per vehicle. The chosen contractor would be encouraged as part of the contract to introduce a Travel Plan for its staff to limit the number of private car trips to the site. The Travel Plan will form part of iterations to the CTMP and would be agreed with WCBC prior to works beginning on Site.

3.4.7 Mud and debris would be prevented from being taken ono the adjacent highway network through the use of appropriate wheel wash facilities located within the Site, within each array area. There would be wheel wash facilities located at each of the Site accesses (within the Site) and Site operatives would direct all traffic to cross the wheel wash facility before exiting the Site.

3.4.8 Pedestrian safety throughout the construction programme will be paramount. To ensure pedestrian safety during loading and unloading activity, a Banksman / traffic marshal should be present to minimise the likelihood of conflict with pedestrians. Warning signage will be provided locally to the site to ensure that vehicles, pedestrians, and cyclists are aware that construction activity is taking place. The site will be properly secured, helping to ensure that pedestrians and the general public cannot access the construction site unauthorised.

3.4.9 There may be some impact on the PRoW network during the construction phase. The affected PRoWs will therefore be subject to temporary closures / diversion orders, or will remain open as existing and subject to careful management during the course of the construction works. PRoW mitigation measures will be set out within the detailed CTMP (following appointment of a Principal Contractor) and can be subject to further discussion and agreement with WCBC.

3.4.10 The Applicant, or its representative, will liaise with all neighbouring residents and businesses to ensure they are aware of the construction programme and the

development proposals. Communication with local residents and businesses will begin prior to commencement of construction.

3.5 Ecological Construction Period Mitigation Measures

3.5.1 Recommendations for ecological mitigation are made based on the mitigation hierarchy;

i) **Avoidance** – significant harm to wildlife species and habitats should be avoided through design.
ii) **Mitigation** – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.
iii) **Compensation** – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

3.5.2 An assessment of the likely significant impacts on ecology occurring as a result of the Proposed Development is provided at Chapter 7.0 of the ES.

3.5.3 As outlined within Chapter 7.0 of the ES, the potential ecological effects associated with the construction phase of the Proposed Development are considered to relate to:

i) Direct land take (habitat loss) to accommodate the Proposed Development;
ii) Temporary disturbance and land take for construction, laydown areas and construction compounds (land restored thereafter);
iii) Disturbance to, fragmentation or severance of connecting habitat or potential bat commuting routes within and adjacent to the Site; and,
iv) Disturbance and pollution (indirect effects such as noise and vibration, lighting, dust, pollution from surface water run-off) resulting from Site clearance and construction, plant and vehicles movements and Site workers' activities.

3.5.4 An ecologically sensitive approach to construction will be implemented. Measures to be taken to limit the likelihood of impacts upon retained habitats during the construction process through damage, pollution and disturbance will include:

i) Best practice and regulatory pollution prevention measures, including in relation to noise, lighting, dust and contamination.
ii) Buffering and protection of retained habitat features.
iii) Pre-construction surveys.
iv) Installation of barriers to protect trees and hedgerows, as required by the Arboricultural Impact Assessment (AIA) (Authored by: Tree 21, September 2025).
v) The first phase of works would be the erection of boundary fencing, with all subsequent works contained within these. This would ensure no accidental encroachment beyond the Site boundary to adjacent habitats.
vi) Where left open overnight, trenches will be required to be backfilled or covered overnight. This will serve to ensure great crested newt (or other fauna) do not become trapped within trenches.
vii) Prior to commencement of works each morning, trenches will be checked for presence of great crested newt (and other fauna).
viii) Appointment of an Ecological Clerk of Works (ECoW) holding a Natural Resources Wales licence (or an accredited agent) to disturb great crested newt will be retained for the duration of the Proposed Development, with details made available to all site staff; in the event a great crested newt is found the ECoW would be contacted to advise on any further measures to be implemented.
ix) Implementation of Reasonable Avoidance Measures (RAMs) for protected species.

3.6 Tree Protection, Retention and Removal

3.6.1 An AIA has been prepared to inform the planning application. The AIA includes detail of protective measures for retained trees and hedgerows where considered appropriate. The protective barriers are intended to be installed before any works begin, including perimeter fencing and enabling works.

3.6.2 Protective barriers to fully protect every single tree and tree group on this site is not considered necessary or appropriate. For example, protecting maintained hedgerows are not considered necessary as root spread is likely to be very minimal into the field parcels and the installation of barriers along every hedgerow would increase the overall movement across the Site, resulting in a greater risk of tree impact in other areas.

3.6.3 The temporary barriers proposed will minimise damage within the Root Protection Areas (RPA) of retained tree and groups. The areas within the protected areas will be a Construction Exclusion Zone (CEZ). No activity at all, including the storage of materials or equipment will be undertaken within the CEZ.

3.6.4 The protective barriers will be installed before any other works and maintained in good condition throughout the construction period and only removed on completion.

3.6.5 Any damage arising to any retained tree will initiate an inspection by an Arboricultural Consultant, who will provide appropriate management specifications, to be agreed with the Arboricultural Consultant before implementation.

3.7 Landscape Construction Period Mitigation Measures

3.7.1 The effect of construction activity on landscape character and upon views would be incremental and would vary during the construction period. Visual effects arising from construction activity would be short term and reversible. The influence of construction activity would be limited by vegetation cover within the Site and in its surroundings.

3.7.2 A Glint and Glare Assessment [Authored by: PagerPower, September 2025] has been completed to inform the planning application. This assessment identifies that the proposed vegetation screening will ensure that potential for glint and glare impacts to residential receptors and road users is reduced sufficiently.

3.7.3 All construction works would be carried out in accordance with best practice to avoid and minimise the extent of adverse visual effects as far as possible. The detailed CEMP will include the following measures:

i) Planning and implementation of construction activities in such a way as to limit the need for any temporary closures and/or diversions to public rights of way.

ii) Measures to ensure that all temporary works are removed.

iii) Measures to retain existing vegetation as far as possible and to protect it from any potential harm resulting from proposed construction activities.

iv) Measures to minimise or eliminate any adverse effects resulting from temporary construction lighting, as detailed in Section 3.8 of this OCEMP.

3.8 General Provisions

Hours of Working

3.8.1 It is anticipated that normal working hours during the entirety of the construction phase would be between 07:30 until 18:00 Monday to Friday and between 08:00 and 14:00 on Saturdays, allowing one hour either side of this period for site start up in the am period and site close down during the pm period. These periods will not include the operation of site plant or construction activity, and are designed to allow the gradual and controlled arrival and dispersal of site personnel.

3.8.2 These working hours would only be exceeded in exceptional circumstances where specific need arises.

Control of Noise

3.8.3 Measures to control noise as defined in Annex B of BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites - Part 1: Noise'[1] and measures to control vibration as defined in Section 8 of BS5228:2009+A1:2014 'Part 2: Vibration'[2] will be adopted where reasonably practicable. These measures represent 'Best Practicable Means' (BPM) (as defined by section 72 of the Control of Pollution Act 1974) to manage noise and vibration emissions from construction activities.

3.8.4 In accordance with BS 5228, the construction contractor would be required to implement a process for addressing any noise complaints during the construction period. Complaints would be recorded along with details of any appropriate remedial

[1] *BSI Standards Publication, BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1: Noise, 2014.*
[2] *BSI Standards Publication, BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part2: Vibration, 2014.*

action within a complaints register. These records would be available upon request for inspection by WCBC. Any enquires received, irrespective of whether a complaint or request for information, would be dealt with in a timely manner.

3.8.5 Any complaints received are to be recorded into the register within 24 hours. The complainant would be notified of any findings relating to the complaint.

Control of Dust

3.8.6 Dust emitting activities can be greatly reduced or eliminated by applying site- specific mitigation measures. A Dust Management Plan will be developed and implemented by the Contractor preconstruction and approved by WCBC, which will confirm the measures that should be taken to avoid nuisance from dust.

3.8.7 Table 3.1 below outlines a broad range of control measures associated with each type of dust-producing activity, which could be considered for inclusion within the Dust Management Plan. This list is not exhaustive and other site-specific measures can be included in the Dust Management Plan by the construction contractor.

Table 3.1 Potential dust control measures

Activity Type	Control Measure
General	Develop and implement a stakeholder communications plan that includes community engagement before work commences on the Proposed Development. Display the name and contact details of the person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. Develop and implement a Dust Management Plan, which will measure to control other emissions, approved by WCBC.
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken. Make the complaints log available to the local authority when asked. Record any exceptional incidents that cause dust and/or air emissions, both on- or off-site and the action(s) taken to resolve the situation in the log book.
Monitoring	Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the Proposed Development, with cleaning to be provided if necessary.

Activity Type	Control Measure
	Carry out regular site inspections to monitor compliance with the Dust Management Plan, record inspection results and make an inspection log available to the local authority, when asked. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
Site Maintenance	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as practical or possible. Erect solid screens or barriers around dusty activities or the Site Area that are at least as high as any stockpiles on the Proposed Development. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. Avoid site runoff of water or mud. Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. Cover, seed or fence stockpiles to prevent wind whipping.
Vehicle Operation / Sustainable Travel	Ensure all vehicles switch off engines when stationary – no idling vehicles. Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). Implement a wheel washing system from each construction compound
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques, such as water sprays or local extraction. Ensure an adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. Use enclosed chutes and conveyors and covered skips.

Activity Type	Control Measure
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use the fine water sprays on such equipment wherever appropriate. Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste Management	Prohibit bonfires and burning of waste materials.

Control of Lighting

3.8.8 Temporary site lighting, in the form of mobile lighting towers will be required in areas where natural lighting is unable to reach (sheltered/confined areas) and during core working hours within winter months. Artificial lighting would be provided to maintain sufficient security and health and safety for the construction areas, whilst adopting mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecological and residential). The control of lighting will ensure that features of value for foraging and commuting bats are not subject to excessive additional lighting during construction of the Proposed Development.

3.8.9 All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:

i) The use of lighting will be minimised to that required for safe site operations. Infrared, movement sensor security lighting would be used at night. Lighting would be available for emergencies.
ii) Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via the use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal); and
iii) Lighting will be directed towards the middle of the Construction Area rather than towards the boundaries.

Control of Water Pollution

3.8.10 Construction activities can have both direct and indirect impacts on various aspects of the water environment including water quality, flood risk, surface water drainage

and the hydrogeology associated with the Site. Potential receptors may to include watercourses, surface water bodies, groundwater and floodplains.

3.8.11 In order to maintain ground permeability construction compounds would be formed from permeable gravel (or similar) material. The compound would include a lay-down area for deliveries and be located close to an existing highway, which would minimise the movements across the Site and therefore potential impact on drainage, soil erosion, compaction or pollution. The location

3.8.12 Precautions would be taken during plant operation in any areas where there is increased risk of hydrocarbon/chemical spillage. Any relevant fuels, lubricants or chemicals would be stored in accordance with the appropriate NRW Technical Guidance Notes with an impermeable base and suitable bunding to prevent discharge.

3.8.13 The following measures should be included in the CEMP that is to be prepared by the construction contractor:

i) Use of low tyre pressure machinery to reduce compaction.
ii) A delivery and construction schedule that minimises repeat journeys.
iii) Temporary measures such as sediment traps using geotextiles, straw and temporary bunding to minimise the risk of pollution.

Waste Management

3.8.14 The Waste (England and Wales) Regulations 2011 place a duty on all persons who produce, keep or manage waste to apply the 'Waste Hierarchy' in order to minimise waste production at every stage of the development.

3.8.15 The Waste Hierarchy is a concept which requires anyone managing waste to consider first waste prevention, preparing for reuse and recycling, followed by waste recovery methods e.g., energy recovery and, lastly, waste disposal.

3.8.16 In order to control the waste generated onsite during the construction phase, the construction contractor will separate the main waste streams onsite, prior to transport to an approved, licensed third party waste facility for recycling and disposal.

3.8.17 All reasonable actions will be taken by the contractor to minimise the volume of waste produced as a result of the construction of the Proposed Development. This can be through reducing consumption, reuse, using resources efficiently, and designing for longevity. Waste segregation will be undertaken where possible to maximise the opportunities for reuse and recycling.

3.8.18 In order to control the waste generated on-site during site preparation and construction, the construction contractor will separate the main waste streams on-site, prior to transport to an approved, licensed third party waste facility for recycling or disposal.

3.8.19 All waste to be removed from the Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities.

Best Practice Measures

3.8.20 The Considerate Constructors Scheme (CSS) will be adopted to assist in reducing pollution and nuisance from the Proposed Development, by employing best practice measures which go beyond statutory compliance.

4.0 ROLES AND RESPONSIBILITIES

4.1.1 This section of the Outline CEMP will be developed over time to include contact details for those with key responsibilities relating to construction activity. Table 4.1 will be updated at each iteration of the Outline CEMP and will be finalised as part of the CEMP produced by the construction contractor.

Table 4.1 Key contacts and responsibilities – to be confirmed as part of the DNS application

Role	Name	Responsibility	Address	Name and Contact details
Applicant	RWE Renewables UK	To ensure that all planning conditions and environmental commitments are met and / or implemented.	RWE Renewables Europe & Australia GmbH, 14 Bird Street, London, W1U 1BU	Robin Johnson info@butterflysolarfarm.co.uk
Main Contractor	TBC	To develop further iterations of the CEMP in line with the findings of the ES and other documentation as required.	TBC	TBC
Site Manager	TBC	Responsibility for the implementation of the CEMP and any subordinate documentation on a day to day basis. Must ensure that procedures are in place for the dissemination of information contained within the CEMP.	TBC	TBC
Environmental Officer	TBC	Responsible for updating and disseminating information within the CEMP. Facilitating tool box talks as required.	TBC	TBC
Project Quality Officer	TBC	Responsible for setting up and management of a filing system for the recording of environmental information.		

Role	Name	Responsibility	Address	Name and Contact details
Applicant's advisor	TBC	To confirm that the CEMP is being updated in line with requirements, to undertake site audits on behalf the Applicant.	TBC	TBC

5.0 ENVIRONMENTAL CONTROL MEASURES

5.1.1 A Commitments Register will identify the environmental commitments proposed to address the potential environmental effects of the preparatory and main works.

5.1.2 The Commitments Register will present an initial register, developed using information presented in the EIA. The Commitments Register will be updated by the contractor when preparing the CEMP prior to construction and then 'as required' as the Proposed Development progresses.

i) The Commitments Register will include:
ii) A clear and specific description of the action.
iii) The objective of the action.
iv) How the action is to be implemented/achieved.
v) The source of the action, including references for source documentation.
vi) Naming of the person responsible for the action.
vii) Achievement criteria and reporting requirements.
viii) The project stage, date of implementation and achievement.
ix) Details of any monitoring required and corrective action.

6.0 MONITORING

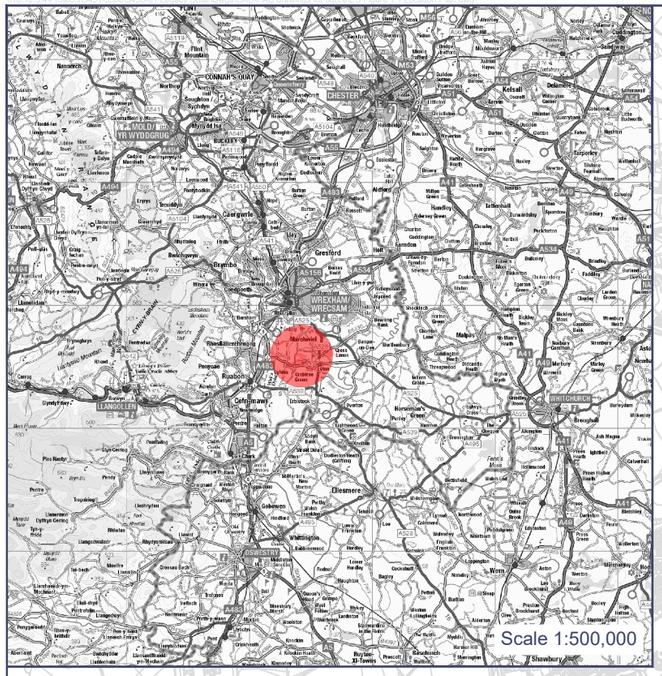
6.1.1 The Outline CEMP submitted with the DNS application will describe systems of recording and inspections that will be required to maintain an audit trail of the environmental obligations. This will be managed through the Quality and Safety Management Systems (QMS) and the Environmental Management System (EMS) of the contractor which will be certified in line with the ISO 14001 standards.

6.1.2 The system would include methods for monitoring, recording, and implementing environmental management on site, and for responding to any noted areas of non-compliance. This will ensure that a high standard of environmental control is maintained through the lifetime of the scheme through the corrective action system managed by the contractor.

6.1.3 The contractor's Project Quality Administrator will ensure there is a central filing system in place for any checklists, reports and monitoring consistent with the Project QMS and EMS. Records of compliance with the requirements of the CEMP, derived from audits and other inspection by representatives of any internal or external audit teams, will be kept on file.

6.1.4 Further details of maintenance and monitoring will be included in the Outline CEMP submitted with the DNS application.

\\10.10.3.4\Projects\3451-3500\3456-01 Legacy Solar\Dwgs\CAD\PAC drawings for fourth\ES Figure 1.1 Location Plan.dwg



Application Boundary

Site Location

Solar Array Areas

Grid Route - Northern option

Grid Route - Western option

Western Array Area

Central Array Area

Eastern Array Area

A483

B5426

B5130

N

0 0.5 1 1.5 2 3km

RWE

0344 8700 007
axis.co.uk

axis

Project

Glöyn Byw / Butterfly Solar Farm

Figure Number

ES Figure 1.1

Figure Title

Location Plan

Scale

1:30,000 @A3

Date

September 2025