

**APPENDIX 5.1**  
**OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN**

**Alleston Solar Farm**  
**Outline Construction Environmental Management Plan**

## Document Control Sheet

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# 1 Introduction

## 1.1 Overview

- 1.1.1 This outline Construction Environmental Management Plan (oCEMP) has been prepared by Stantec on behalf of Alleston Clean Energy Limited (the Applicant) in support of a planning application for a ground mounted photovoltaic (PV) solar farm together with associated equipment, infrastructure and ancillary works (the Development) on Land at Alleston Farm, Lower Lamphey Road, Lamphey, Pembrokeshire (the Site) submitted to Planning and Environment Decisions Wales (PEDW). A Site Boundary Plan is contained within the ES as Figure 1.1.
- 1.1.2 This outline CEMP first provides an overview of the Site, its surroundings and a description of the Development (Section 2), before detailing an overview of the construction processes and practices (Section 3) with the outline CEMP then concluded (Section 4). The oCEMP also addresses comments raised in the EIA Scoping Direction adopted by PEDW. PEDW has requested that mitigation measures within the oCEMP regarding transport, waste, air quality, noise and vibration should be included as detailed in Table 2.1 of ES Chapter 2.
- 1.1.3 Upon any grant of consent, it is envisaged that a planning condition would require a detailed CEMP, developed and owned by the principal contractor, based upon this document, be submitted to, and approved in writing with PEDW prior to the commencement of the Development.

## 2 The Site and the Development

### 2.1 Site Context and Description

- 2.1.1 The Site is located on land at Alleston Farm, Lower Lamphey Road, Lamphey, Pembrokeshire (see Figure 1.1 of the ES) and is bound to the north by Lower Lamphey Road and agricultural fields, and to the east by further fields. Watery Lane forms the western and south-western boundaries of the Site. The southern boundary follows an existing area of woodland in a south-easterly direction, through which a watercourse runs. In addition, there are a small number of residential properties located adjacent to the north and west of the Site boundary.
- 2.1.2 Residential dwellings within Pembroke lie 190m north-west of the Site whilst the village of Lamphey is located 370m to the north-east of the Site.
- 2.1.3 Land use in the surrounding area of the Site is predominantly agricultural, with scattered farmhouses as well as residential developments associated with Pembroke and Lamphey. The West Wales Line railway line, which connects Pembroke and Lamphey, runs approximately 40m north of the Site. Pembroke train station is 680m north-west of the Site and Lamphey train station is located 415m east of the Site. Lower Lamphey Road also provides connections between Pembroke and Lamphey, with onward vehicular access to the A477 beyond Lamphey via The Ridgeway and Stephens Green Way.
- 2.1.4 The Site encompasses approximately 96 hectares (ha) and comprises primarily numerous agricultural fields separated by rows of mature hedgerows. A Field Numbering Plan (Figure 3.1) identifies the 14 fields within the Site. Alleston Farmhouse, a Grade II Listed building, and the associated buildings are the only built structures on the Site and are located within its centre, accessed from the north along Lower Lamphey Road and West along Watery Lane, both along unnamed tracks. Within the eastern region of the Site are a collection of fields currently used for equestrian activities. Whilst an area of mature trees and vegetation is located within the south-western region of the Site and run into the central region of the Site, this collection of trees is known as Alleston Wood and is classified as Ancient Woodland.
- 2.1.5 In terms of topography, the Site slopes downwards from highpoints in south and west (approximately 55 Above Ordnance Datum) towards the north and east, and two unnamed watercourses are located in the north of the Site. Additionally, a watercourse is located along the southwestern boundary, within the existing woodland.
- 2.1.6 There are two Public Right of Ways (PRoW) which cross and meet in the centre of the Site. The first PRoW (SP32/52) runs to the western boundary of the Site and is accessible via Watery Lane. This PRoW connects to a bridleway (SP32/68) which borders the west of the Site and runs in a north-south direction, on Watery Lane. The second PRoW (SP32/51) runs in a north-south direction across the northern and southern area of the Site. This PRoW will be diverted to the southwestern edge of the farm's boundary via a Secondary Consent submitted alongside the main application.

### 2.2 The Development

- 2.2.1 The Development will comprise of ground-mounted solar PV arrays and associated infrastructure with a grid connection via an existing 132kV overhead line, which crosses the Site as seen on the Site Layout Plan (see Figure 3.3 of the ES). Planning consent is being sought for the following description of the Development:

*“Ground mounted photovoltaic solar farm together with associated equipment, infrastructure and ancillary works”.*

- 2.2.2 The Development includes the following elements:

- The photovoltaic modules will be installed on a fixed tilt structure, facing south. Key features of the installation which should be noted, and which arise from the topography of the Site. Attention is drawn to the following key points:
- The fixed tilt range is 10-25 degrees from the horizontal.
- The spacing between the rows will range from 2.5-5 metres.
- The lowest part of the structure will be about 0.8 metres above ground level.
- The highest point of the structure will range from about 3 metres to a maximum of 3.4 metres above ground level. However, at topographical high points within the Site the highest point of the structure will not be more than 3 metres above ground level.

The ranges described above will not be noticeable to viewers looking into the Site;

- Compacted gravel access roads (3.5-4m wide for single tracks, and up to 6m wide for 2-way tracks) connecting fields and infrastructure;
- Deer fencing and gates will enclose the Site (approximately 2m high);
- Palisade fencing with an electric fence and additional stock fence will enclose any High Voltage compounds (approximately 2-3m high);
- CCTV/infra-red cameras on columns up to 5m high;
- Cables will either be buried in trenches, at depths between 600mm & 1500mm or fixed within the support structure
- String inverters will be located on the metal framework supports behind the panel rows throughout the Site;
- Transformer Stations will be provided converting 800V AC electrical power to 33 kV AC electrical power;
- Up to 3 weather stations (up to 5m high);
- A Distribution Network Operator (DNO) substation and substation building; and
- Temporary construction compounds.

2.2.3 The Development will connect to the electricity grid via the 132kV overhead line which is located within the Site boundary.

#### Operation

2.2.4 The Development has a proposed operational lifespan of 40 years. During the operational phase maintenance activities, including servicing of plant and equipment and vegetation management, will be undertaken. There may be occasional need for works of repair which might disturb soils. Each month there will be approximately two people on Site for maintenance activities, such as module cleaning and vegetation maintenance. If possible, any works requiring soils to be moved will be timed for the summer period, following the guidance in the outline Soil Resources Management Plan. The Landscape and Ecological Management Plan (LEMP) will contain the management and monitoring planned for all vegetation and ecological management during the operational phase. An outline LEMP has been prepared and is included as Appendix 7.9 of the ES.



2.2.5 The module cleaning mentioned above will be undertaken typically by a tractor towing a water tank. Usually, the panels will be cleaned annually. This is normally undertaken in spring or early summer, when ground conditions are suitable, because this is the best period to clean panels so that they maximise their solar intake. Management and maintenance machinery will also include grass cutting and vegetation management machines, which will generally be small and light. Overall vehicle trafficking will be lower than for the current agricultural use.

#### Decommissioning

2.2.6 When the PV array is to be decommissioned after 40 years of operation, the above ground elements will be removed from the Site and the land can be restored to agricultural use. The oDEMP (Appendix 5.2) sets out measures to be implemented during decommissioning.

### 3 Outline Construction and Environmental Management Plan

#### 3.1 Construction Approach and Phasing

3.1.1 The Development will be constructed within a single phase of works lasting approximately 9 months. The specific works order and sequencing will be developed further by the appointed contractor following the grant of planning permission. However, the general sequencing is expected to commence through the following stages:

**Table 1: Outline Construction Programme**

<b>Site preparation</b>	3.1.2	Management of existing ground conditions and installation of any necessary protection measures on-Site, to farm access tracks and adjacent land
	3.1.3	Laying access roads/temporary tracks
	3.1.4	Preparation of hard standings for construction compound
	3.1.5	Preparation of hard standings for export substation
	3.1.6	Preparation of hard standings for substations/transformer stations
	3.1.7	Installation of perimeter fence
<b>Solar array installation</b>	3.1.8	Equipment delivery and distribution
	3.1.9	Installation of panel supports – pile driven or pre-cast ballast
	3.1.10	Frame construction and panel mounting
<b>Associated infrastructure installation</b>	3.1.11	Cabling
	3.1.12	Delivery and installation of substations and inverters
	3.1.13	CCTV/infra-red installation
<b>Completion works</b>	3.1.14	Construction compound removal
	3.1.15	Temporary track removal
	3.1.16	Landscaping and creation of Biodiversity Enhancement Features

## 3.2 Site Preparation

### Site Establishment

3.2.1 The initial stage of works will include the access works and visibility splay improvements, marking out the Site, creation of the construction compound and temporary welfare facilities. During this stage initial deliveries of stone or temporary matting to form the base of the construction compound would be undertaken. The initial stage of works will also comprise the delivery of excavation equipment on the Site.

### Ecological Clerk of Works

3.2.2 An Ecological Clerk of Works (ECoW) will be nominated at the site preparation stage and will be a suitably qualified ecologist with at least five years' relevant experience. The ECoW will assist and advise the Developer and the Site Manager(s) in their adherence to the relevant wildlife legislation, planning conditions and ecological requirements of the detailed CEMP.

3.2.3 Typically, a permanent on-site presence is not required. Instead, an ECoW will attend at pre-arranged and timetabled work stages as set out in this document, as well as being available via an 'on-call' basis throughout the construction phase. This will rely on adequate regular and ad-hoc communication between the Site Manager and the ECoW. This will enable any rearranged or changed timetables to be accommodated, as well as a prompt response for dealing with any potential habitat or protected species protection and legal compliance issues that could arise during the course of construction.

3.2.4 The ECoW will be contacted as early as possible in the unlikely event that any activities on site contravene the measures prescribed in the CEMP, for instance, should there be any unforeseen, but essential requirement to enter any of the Biodiversity Protection Zones. The ECoW will be consulted prior any such action being carried unless in emergency situations.

### Ecological Toolbox Talks

3.2.5 Prior to the commencement of works a toolbox talk will be provided by the ECoW to the Site Manager and contractors. The toolbox talk will include details of the CEMP and will highlight the whereabouts and sensitivity of the various ecological features present within each Site. The talk will establish the role of the ECoW and site personnel during works, and what to do if protected species/ecological constraints are found during works.

3.2.6 In the event a change in Site Management personnel occurs during construction or a pause in works of a period of more than 30 consecutive days occurs, a toolbox talk will need to be provided again by the appointed ECoW. The Site Manager should inform the ECoW of any forthcoming management changes or breaks in the construction programme. The Site Manager will be responsible for relaying information within the toolbox talks to all subsequent site staff during their initial site inductions. The ECoW will provide the Site Manager with paper materials and mapping which can be used to illustrate the whereabouts and nature of ecological features within site inductions.

### Site Groundworks

3.2.7 Site preparation will include installation of maintenance tracks whilst an area of hardstanding will be made for substations, transformers and associated equipment. Temporary drainage measures will be implemented on the Site, during the Site preparation stage. Trenches for the cabling will be created to improve the access of the site and reduce any HSS risks.

### Site Fencing

3.2.8 As part of the Site preparation, installation of perimeter fencing (deer fencing) will be installed around the perimeter of the Site, as well as other temporary tree protection fencing.

3.2.9 The majority of the Site's valuable ecological features are contained towards field boundaries. As such, fencing within every field will be installed at the onset of the construction phase to ensure damage and degradation to these features does not occur. This fencing contributes to the protection of all designated sites, important habitats and protected species. The location of fencing will match the following distances from the various field boundary habitats present within the Site as set out in Chapter 9 Biodiversity:

- 10m from hedgerows and watercourses
- 10m from outlier badger setts
- 15m from woodland
- 30m from a subsidiary or main badger sett
- At least the Root Protection Area (RPA) or larger for all mature trees

3.2.10 The layout of the above fencing is shown on the Landscape Strategy Plan (see Figure 7.12 of the ES).

### **3.3 Construction of the Substation**

3.3.1 The substation is the connection between the Solar Array and the National Grid Electricity Distribution Network, construction works will be completed by both parties. Access tracks will be constructed and ground cleared to enable platform construction to support electrical transformer and switchgear installation as well as the export cable to connect to the nearby 132kv OHL circuit. The substation will be fenced for security.

### **3.4 Solar Array Installation**

3.4.1 Due to the extent of the Development, the traffic within the Site will be managed and controlled to avoid unnecessary distribution journeys, in accordance with the Construction Traffic Management Plan, as submitted alongside the planning application. Where these journeys are made, they will be within restricted zones to further reduce the likelihood of significant soil compaction. More information regarding traffic implications of the Development is detailed within the Transport Assessment submitted alongside the planning application.

3.4.2 The components will be delivered to localised distribution points within the Site from where they will be distributed by bobcat or other associated distribution vehicle. The equipment used is similar to agricultural machinery used on arable farms and is specifically designed to ensure minimal soil compaction.

3.4.3 The installation of the solar panels and their supporting framework is undertaken in sequence across the Site. First, the vertical support 'legs' of the framework will be pile driven into the ground to a depth suitable to ground conditions but typically to a depth of 0.5 m to 4.5 m. The horizontal framework is then attached to the vertical support and associated metal rails and fixings attached using nuts and bolts. Connecting cables are installed in the support rails and then the solar photovoltaic panels are then fixed to the framework. Finally, the electrical connections between the individual panels, and panel rows are made. The sequencing of the parcels will be determined by the appointed contractor.

3.4.4 The piling method will be determined prior to works commencing depending on the final PV array supporting framework design forming the Development and further ground studies.

### **3.5 Biodiversity Protection - Avoidance of Impacts on Protected Species**

3.5.1 Habitat removal will be necessary in a limited number of locations, for example to permit construction/operational access through hedgerows and ditches as set out on the Landscape Strategy Plan (Figure 7.12 of the ES).

### General Precautionary Approach to Hedgerow Removal Works

- 3.5.2 Many habitats on Site support protected species, consequently, any impacts upon them - whether temporary or permanent - will require precautionary measures to mitigate the impacts and/or the potential for unlawful or detrimental impacts on the species they support. Habitats which are of particular value include: **hedgerows**, **ditches** (dry or wet), **woodland** or **copses**, individual **trees**, **scrub**, **grassland**, **streams** and **ponds**. Wherever the above habitats listed in bold are to be affected, an ECoW should be present and have undertaken an inspection in advance to ensure legal compliance and avoid undue harm to species potentially present. The extents of habitats to be cleared are very limited within the development, consisting of small numbers of short sections of hedgerow and/or scrub and associated agricultural ditches to facilitate site access. These locations are all shown on the Landscape Strategy Plan and should not be deviated from.
- 3.5.3 The Site Manager shall be responsible for liaising with the ECoW in order to agree locations and timings of advance inspections and clearance attendance, including all species-specific measures set out below, as necessary.
- 3.5.4 Removal of any hedgerow habitat required for new construction accesses will be undertaken in a two-stage process predominantly using hand tools in order to avoid harm to species such as dormice and reptiles which may be present and hibernating in the winter, and active at other times.
- 3.5.5 Stage 1: Above-ground vegetation will be removed during the months of May to September inclusive. There may be scope to extend this window into April or October, but this is entirely dependent on prevailing climatic conditions and would be at the discretion of the ECoW. Vegetation would be cut down to approximately 100mm above ground level. A nesting bird check of these sections and a fingertip search for reptiles and amphibians will be essential prior to commencing.
- 3.5.6 Stage 2: Removal of below-ground vegetation (roots, soil etc.) would take over the winter months of November to March inclusive. This may be able to be extended into April or October at the discretion of the ECoW.
- 3.5.7 Depending upon the type and density of the vegetation, this inspection may include a combination of a fingertip inspection of vegetation and early morning 'watching' of habitat for evidence of bird nesting behaviour. Further species-specific information is given in the sections below. The vegetation may also need to be cleared a small amount at a time to allow the ECoW to search the area thoroughly.
- 3.5.8 Where any active bird nests are found, a buffer zone of at least 10m (actual distance dependent upon species and nest location, as advised) will be created around the nest, the buffer maintained and not disturbed until the nest is no longer in use. Depending upon the location, protective fencing may be appropriate. The ecologist will be able to advise on the anticipated date of fledging based upon the status of the nest. Regular inspections of the nest site by an ECoW around the anticipated date of fledging will be necessary to ensure works can continue once the birds have fledged.
- 3.5.9 Habitat removal at wet ditches should observe good practice guidance on the use of temporary dams and sediment traps. The input of a hydrological engineer is advisable in order to minimise drainage disruption and localised flooding. All permanently breached ditches should remain interconnected via the use of culverts or clear-span crossings.

### Ground Nesting Birds in Open Fields

- 3.5.10 Between the months of March and August inclusive, when undertaking construction works within arable or pasture fields, nesting bird checks should be carried out to ensure no nests are at risk of harm. As the species concerned are dependent on long, unbroken sightlines of between 75m and 200m for predator avoidance, they are unlikely to be present within close proximity to existing development activities. Therefore, nesting bird checks are most important when development activities progress into previously undeveloped fields during the nesting season. In order to minimise disruption to development activities, close communication on the development programme between the Site Manager and the

ECoW is essential. Habitat degradation, such as mowing vegetation to a short sward height, and dissuasion techniques, such as kite deterrents, may be employed in advance of the nesting season (and maintained up until the onset of development activities) in order to reduce the requirement for nesting bird checks.

- 3.5.11 In the event a nest is discovered, its location shall be mapped and shared with the Site Manager and the location will be avoided, and a buffer radius of at least 50m observed, to be advised by the ECoW (depending on species). The nest location will be revisited around the time of predicted fledging (derived from the status of the nest upon discovery) to confirm fledging and inactivity, enabling development activities to resume.

### **Overwintering Birds**

- 3.5.12 Flocks of overwintering birds such as fieldfare, redwing, snipe and other wildfowl have been recorded within the Site during the winter months. Due to the numbers of birds within such flocks, unnecessary disturbance to them and displacement can be energetically costly and have an adverse impact on the local population. Precautions are given below to minimise this risk.
- 3.5.13 During the winter months of November to February inclusive, any significant commencement or re-commencement of development works within fields will be immediately preceded (in the morning) by an inspection for the presence of flocks of overwintering birds. The aim will be to ensure that flocks of overwintering birds are not subject to displacement and disturbance stresses at this vulnerable time of year. As these flocks move about within the landscape on a daily basis, it should be possible to postpone mobilisation into undeveloped fields which are occupied by them by approximately one day to avoid impacts.
- 3.5.14 The inspections should be carried out by The ECoW. The Site Manager(s) will be responsible for liaising with the ECoW in advance of mobilisation into previously undeveloped fields during the winter months in order to avoid disturbance of overwintering flocks of birds.

### **Tree and Building Inspections for Roosting Bats and Nesting Birds**

- 3.5.15 No works involving the removal of mature or semi-mature trees, or directly affecting any buildings, are anticipated. However, in the event that construction works require trees or buildings to be impacted, altered or removed, these should be thoroughly inspected by a suitably qualified (and licensed, in the case of bats) ecologist in advance. Depending on the nature of proposals and the potential for roosting bats, further surveys may be recommended. In the event that a bat roost is discovered, a licence from Natural England may be required in order to proceed lawfully and ensure compensation for roost losses is carried out.
- 3.5.16 In the event that active bird nests are recorded, works may need to temporarily cease or be delayed until nesting is completed. Losses of nesting opportunities should be compensated as advised by the ECoW.

### **Badgers**

- 3.5.17 Multiple badger setts have been identified within and adjacent to the Site. Badgers are also likely to use the land within the Site for foraging and dispersal in various locations. Badgers are legally protected from disturbance and harm, as well as interference with their setts. Measures given here will ensure that development works proceed lawfully.
- 3.5.18 As badgers can excavate new setts in a relatively short time, an update survey for badger setts of land within the Site will be necessary. This will specifically focus on all habitats potentially suitable for sett excavation by badgers on within the Site, in particular hedgerows, field margins, scrub, tussocky grassland and woodland or groups of trees. The locations of new hedgerow gaps for construction access or cable trenching will be particularly key, but also locations where landscaping, access tracks, fencing, and other infrastructure will be installed within a 30m radius of suitable habitats. The survey will be

carried out by an appropriately experienced ecologist who is an associate or full member of CIEEM with prior experience of surveying for badgers.

- 3.5.19 The survey will be carried out no more than 1 month prior to the commencement of construction activities. The Site Manager will liaise with the ECoW to ensure that this survey is completed in good time ahead of works in a particular location. The results of the survey will be communicated to the Site Manager with any necessary recommendations for revised buffers or precautionary working methods and supervision.
- 3.5.20 Any newly-discovered sett should ideally be avoided by construction works if at all possible, under the advice of the ECoW. In the event that an active sett is to be unavoidably impacted by construction activities, a licence from Natural Resources Wales would likely be necessary to temporarily or permanently close the sett. Works to badger setts can only be undertaken between July and November inclusive due to the possibility of dependent young being underground at other times of year. Outside of this licence period no works affecting the sett would be permitted and a buffer zone free of potentially disturbing activities (i.e. noise, damage or vibration), as informed by the ECoW, would be required. Work in other parts of the site, however, can continue as advised by the ECoW. It can take up to six weeks for a licence application to be determined by Natural Resources Wales, depending on the licence type being applied for.
- 3.5.21 It is likely that badgers (and other mammals) will move around within the Site during the construction phase considering the habitats present. Therefore, any pits or trenches dug during the construction phase (particularly during the cable installation works and use of HDD entry/exit pits) must have a means of escape placed in them overnight for trapped badgers to use, or be covered overnight if possible. Examples include rough sawn planks or earth ramps. Similarly, all open ducting and pipework left within any pits or trenches must be temporarily capped off overnight. The use of these measures will be periodically checked by the ECoW and will be the responsibility of the Site Manager(s) to implement otherwise unlawful harm to badgers and wild mammals may result.

### **Dormice**

- 3.5.22 In the event that a dormouse or dormouse nest, whether occupied or not, is discovered during the habitat inspection or removal works, all clearance activities shall cease until a licence from Natural Resources Wales can be obtained permitting a working method statement to affect dormouse habitat. Further survey information may be required subject to consultation by Natural Resources Wales.

### **Otters and Water Voles**

- 3.5.23 Particular attention will be paid to any habitat removal works affecting or within 30m of a watercourse for the potential presence of otters and water voles.
- 3.5.24 All applicable habitat removal works will be preceded by an inspection of habitat at least 50m upstream and 50m downstream of the clearance extent to look for signs of these species and their sheltering sites. The inspection will be carried out one month in advance of works commencing by a suitably qualified ecologist.
- 3.5.25 In the event that burrows, holts or likely sheltering sites are found, the ECoW will discuss this with the Site Manager(s) and efforts to alter the location of the clearance to avoid direct impacts will be made in the first instance.
- 3.5.26 Should impacts upon holts, burrows or sheltering sites be unavoidable, it will be necessary to delay commencement until a licence from Natural Resources Wales is obtained. Licences will be contingent on seasonal timing restrictions, sensitive working methods and habitat compensation.
- 3.5.27 Culverted or overbridged ditches and watercourses should be designed to permit the continued passage of water voles and otters. The advice of the ECoW should be sought in this instance.

### Non-native Invasive Species

- 3.5.28 A small stand of Japanese knotweed has been recorded within the Site within Alleston Wood. No development activities are required to enter Alleston Wood, therefore spread of this species as a result of development is highly unlikely. However, it is possible that plant species such as Japanese knotweed and Himalayan balsam may occur elsewhere locally, especially within **ditches** and **watercourses**. The ECoW will actively look for non-native invasive species during all supervision and survey work and report their presence to the Site Manager as appropriate.
- 3.5.29 The potential presence of non-native invasive species will form part of the Ecological Toolbox Talk and will help site staff to identify some of these species so that early reporting and any remediation can take place.
- 3.5.30 As it is an offence to release into the wild or cause to grow any non-native invasive species, works will be altered to avoid them in the first instance, if discovered. If this is not possible, remediation and eradication work carried out by a specialist company/consultant would be required as all parts of such plants are considered contaminated waste under the Environmental Protection Act 1990. Until this occurs, the area will be clearly marked out and delineated with protective fencing, so as to not contribute to its spread locally. The Environment Agency has produced a Code of Practice for the Management, Destruction and Disposal of Japanese Knotweed (May 2001), which gives guidance to developers.

### Reptiles and Amphibians

- 3.5.31 Habitat clearance areas (as indicated on the Landscape Strategy Plan) will also be thoroughly inspected by hand before and during works for widespread reptile and amphibians species such as toads and slow worms in order to remove any animals as the clearance works progress. Any amphibians, reptiles or other animals will be hand released in suitable nearby retained habitat as determined by the ECoW.
- 3.5.32 The locations to be used for the creation of reptile hibernacula towards the completion of the construction phase (see the LEMP) will be chosen for their proximity to and connectivity with nearby habitat suitable for reptiles, including tussocky grassland (including that which is proposed within the maintenance scheme – see the LEMP), scrub and hedgerows.
- 3.5.33 In order to avoid inadvertent mortality of reptiles during this process, the creation works will not take place within the winter months (November to February inclusive) or during temperatures below 8C and all areas of the habitat mentioned above will be hand searched and removed with hand tools only once reasonable likelihood or absence of reptiles has been established. All such habitat creation work should be carried out by individuals with experience of identifying reptiles and their habitat.

### Small Mammals -Including Polecat, Hedgehog, Brown Hare and Harvest Mouse

- 3.5.34 As it is an offence to cause harm to wild mammals, the ECoW will carry out a fingertip search of all habitat to be removed before and during the clearance operation as appropriate. Any burrows discovered will either be avoided if at all possible through alteration of the location of works, or if unavoidable, be destructively searched by hand and in a methodical manner in order to ensure no animals are trapped underground or harmed. Any animals discovered during works will be relocated by hand, where collection is possible, to a suitable undisturbed location to be determined by the ECoW. Any injured animals should be taken to the nearest wildlife rescue service.

### Construction-Phase Ecological Monitoring

- 3.5.35 Regular (weekly) inspections of the Site(s) and immediate surroundings will be undertaken by the Site Environmental Manager to monitor the integrity of the BPF fencing as well as for any signs of silt deposition, dust deposition, flooding, runoff and litter arising from the Site which could impact off-site habitats. This inspection will be recorded within a logbook to be made available to the Local Planning Authority upon request. Remedial action which may be required as soon as an issue is identified may



include temporarily ceasing work, arranging litter picking, additional site hoarding, increased water spraying, and increased waste collection.

- 3.5.36 Every month during the construction phase, the ECoW will inspect the Site to ensure the compliance with the EPMS. This will include checking the following:
- Correct installation of protective fencing and observance of ecological buffers;
  - Safeguarding of retained habitats;
  - Hedgerow and watercourse condition;
  - Adherence to lighting restrictions; and
  - Status of badger activity within the Site.
- 3.5.37 Following these inspections, the ECoW will discuss monitoring outcomes with the Site Manager(s) and provide a written proforma of findings identifying any remedial actions and timescales for actions to be implemented. The ECoW will also be available on an “on call” basis during the construction period.
- 3.5.38 A quarterly report will be issued by the ECoW to the Local Planning Authority. The report will include a detailed log of monitoring activities by the Site Environmental Manager and ECoW. It will detail any breaches of the CEMP and the remedial steps taken.

### **Arboricultural Method Statement**

- 3.5.39 A separate Arboricultural Method Statement has been produced and is submitted in support of the planning application. The AMS sets out the required approach to successful tree retention protection. The AMS also includes a final Tree Removal/Protection Plan which specifies which sections of hedgerow are approved for removal along with the protection measures required for retained trees and hedgerows.
- 3.5.40 The site security fence (deer fence) that is to be erected around the periphery of the site will act as an effective tree protection barrier to peripheral trees and must be erected ahead of any construction works commencing within each part of the site. In certain places specific, temporary tree protection barriers are required and these are detailed within the AMS.
- 3.5.41 No individual trees will require removal in order for the approved development to be implemented.
- 3.5.42 The AMS must be used and adhered to by the Project Manager, Primary Contractor and any relevant Sub-contractors.

## **3.6 Associated Infrastructure Installation**

- 3.6.1 Associated infrastructure comprising the substation, edge of park switchgear station and a monitoring cabin. This will be located within the central region of the Site.
- 3.6.2 String inverters and transformer stations are distributed around the Site. The inverters are fixed to a previously installed metal structure (piled legs with cross beams) and positioned in the shade of the solar array whereas the transformer stations will be mounted on concrete foundations and include an oil bund sized to collect at least 110% of the volume of oil within the transformer in event of a spill.
- 3.6.3 The majority of cabling is above-ground and will be mounted in strings beneath the panels. Cables that are required to be buried under the ground will be installed using trench equipment. The maximum depth of the cable trench will be anticipated to be 1.2m deep, the exact depth will be confirmed at the detailed design stage.

- 3.6.4 Deer type security fencing, approximately 2m high, will be erected around the perimeter of the development. The deer fence is designed to allow small animals to pass through the site. Whereas, around any HV compound, a palisade fence with an electric fence and additional stock fence will be installed, approximately 2-3m high. Security and monitoring CCTV cameras will be mounted on posts up to 5m high and positioned at intervals along the internal fence perimeter of the site, facing inwards. Up to 3 weather stations will be installed to measure performance and these will be up to 5m in height.

### 3.7 Completion Works

- 3.7.1 The final stage of works includes the commissioning and testing of all systems on Site, including electrical testing. The relevant installation, safety and compliance certificate will be issued prior to the first export of electricity from the Development. Additionally, the preparation, seeding and planting of new habitats and vegetation is typically undertaken at this stage. All such landscaping and ecological enhancement works will be undertaken in line with the LEMP and the Landscape Strategy Plan. N.B. that preparation for habitat creation may be time-sensitive and may need to be put in place prior to the completion of array installation works.

#### Details of Proposed Storage of Materials

- 3.7.2 Any materials stored on Site will be for maintenance purposes only.
- 3.7.3 All materials necessary to construct the Development will be distributed to the area where they will be installed following delivery on to the Site. When the materials will be stored in temporary construction area, materials will be stored only for a short time period prior to being utilised on the Site after being delivered at regular intervals.
- 3.7.4 All materials will be stored appropriately and in a safe manner. For example, fuel for construction plant and equipment and other flammable materials, will be stored within bunded containers, located away from sources of accidental ignition and in accordance with all applicable legislation and guidance. The Site and temporary Site construction compound areas will be kept to a good standard of tidiness.

#### Temporary Site Lighting

- 3.7.5 Temporary lighting will be installed where necessary to ensure the safety of the workforce. It may be necessary for the doorways of the temporary buildings, to be externally illuminated utilising PIR sensor lighting activated by pedestrian movement approaching/leaving buildings. Such lighting would be appropriately shielded/cowls fitted to prevent light spill away from the doorways.

#### Dust Management and Cleaning of Wheels

- 3.7.6 Construction traffic will be managed to ensure that the construction route into the Site along Lower Lamphey Road and accesses to the Site are kept clean of dust, debris and mud during the works. As an additional measure, as required, a road sweeper will be deployed by the Site manager if necessary.
- 3.7.7 Measures will be put in place to ensure that wheel wash runoff (or other run off from rainfall) does not drain onto the public highway or carry sediment.
- 3.7.8 Dust suppression measures will include storage of sand and other aggregates in bunded areas. Where possible, dry sweeping of large areas will be avoided and surfacing equipment will only be operated with any manufacturer's dust measurements in place, such as dampening down.
- 3.7.9 All construction traffic including delivery vehicles will be limited to 20mph to minimise the generation of air borne dust. The roads will be dampened at times of extended dry weather.

### Details of Emergency Procedures and Pollution Response Plans

- 3.7.10 Emergency contact details, and a complaints / comments procedure for the Site / H&S manager will be placed on a notice board near the Site entrance. A pollution response plan will be prepared by the contractor following appointment. The pollution response plan will follow appropriate guidance and cover matters including fuel delivery and fuel storage, provision and control of silt, working near water bodies and sources of soil and groundwater contamination.
- 3.7.11 The pollution response plan will fully outline the measures to be adopted in the event of a spill and/ or pollution incident.

### Agricultural Land and Soils

- 3.7.12 Good working practices will be implemented to ensure soil structure is not damaged as a result of trafficking or trench works, in line with the Soil Resources Management Plan. An outline Soil Resources Management Plan is attached to this ES as Appendix 8.2. Good working practices will mean that disturbance to the soil profile is limited only to those areas where trenching for cabling is needed, and they will be replaced in the order they were removed, such that even localised works do not affect agricultural land quality. In areas where infrastructure is required for the duration of the operational period, such as tracks or transformers, these areas will be capable of restoration on decommissioning. Access to all farmed areas within the Site will be retained throughout the construction period.
- 3.7.13 Construction work at the Site will not suspend agricultural management of the land and forms the start of a period of altered agricultural use or practices for the occupying farm businesses.

### Construction Noise Mitigation

- 3.7.14 Construction activities can give rise to noise associated with the works required to construct the Development. The piling of the supporting structures to the solar array framework is typically the activity which generates most noise during the construction phase. Where possible, plant and equipment utilised in construction works, will be deployed with suitable noise mitigation or specification (i.e., the quietest plant or construction method feasible).

### Drainage Works

- 3.7.15 Temporary drainage infrastructure will be installed to manage and regulate surface water run-off during the construction period.
- 3.7.16 To ensure that the Development does not have any adverse off-Site impacts or increase flood risk elsewhere, surface water will be managed using sustainable drainage system (SuDS) techniques. It is anticipated that these will be constructed during the infrastructure works when installing the temporary surface water management measures. Engineering works, including cut and fill, will be required to allow suitable depth and extent of drainage basins.
- 3.7.17 All Site works will be undertaken in accordance with CIRIA (2001) Control of Water Pollution from Construction Sites<sup>i</sup> which promotes environmental good practice for control of water pollution arising from construction activities.
- 3.7.18 Construction vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local water environment and thus the risk of accidental spillage or release will be minimised.
- 3.7.19 In accordance with the Control of Pollution (Oil Storage) (Wales) Regulations 2016<sup>ii</sup>, any tanks storing more than 200 litres of oil will have secondary containment. Regarding minimum capacity, *'if the tanks aren't hydraulically linked but are in the same secondary containment system, the containment capacity must be a minimum of 25 per cent of the total capacity or 110 per cent of the largest tank, whichever is*

*greatest. If the tanks are hydraulically linked but situated in the same containment system, they should be treated as one tank. The containment capacity should be a minimum of 110 per cent of the total capacity of the tanks.’ Any above ground storage tanks will be located on a designated area of hardstanding. Storage of liquids such as degreasers, solvents, lubricants and paints will be in segregated, bunded enclosures. The construction drainage system will be designed and managed to comply with BS6031 “The British Standard Code of Practice for Earthworks”<sup>iii</sup>, which details methods that should be considered for the general control of drainage on construction sites. Further advice is contained within the Geotechnical Design, General Rules (BS EN 1997)<sup>iv</sup> which should be read in conjunction with Basis of Structural Design (BE EN 1990)<sup>v</sup>.*

### **Waste Management**

3.7.20 The construction phase of the Development will be conducted in such a way as to minimise the creation of waste, and where possible, maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible. Any waste material arising from the Site preparation activities suitable for reuse will be retained where possible. Recyclability will be increased by segregating construction waste to be re-used and recycled where reasonably practicable.

### **Hours of Work**

3.7.21 Working hours on the Site will be agreed with PCC through the detailed CEMP. However, the standard hours of work will be adhered to. These are:

- Monday to Friday, 7am to 7pm with noisy activities limited to 8am to 6pm;
- Saturday, 8am to 1pm; and
- Sunday and Bank Holidays, no noisy activities on-Site.

3.7.22 All work outside these hours will be subject to prior agreement of, and/or reasonable notice to PCC, as appropriate.

3.7.23 Night-time working will be restricted to exceptional circumstances and work internally with buildings. By arrangement, there may be some out of hours construction deliveries made to the Site.

## 4 Conclusions

- 4.1.1 This oCEMP has been prepared to support the proposed installation of a ground mounted solar farm together with associated equipment, infrastructure and ancillary works, on land at Alleston Farm, Lower Lamphey Road, Lamphey, Pembrokeshire.
- 4.1.2 This document has set out a summary of construction processes and construction practices to be implemented during the construction of the Development. Through the implementation of measures set out the construction works can be undertaken in accordance with the principles set out in the application and supporting documents including Chapter 5 Construction Methodology of the Environmental Statement to safeguard the amenity of local residents, ecology, geology and the environment.
- 4.1.3 It is therefore concluded this oCEMP sets out in sufficient detail the general construction approach. A detailed CEMP would be secured by condition prior to construction commencing.

# References

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- <sup>i</sup> CIRIA C532 (2001) Control of Water Pollution from Construction Sites Guidance for consultants and contractors
- <sup>ii</sup> The Control of Pollution (Oil Storage) (England) Regulations 2001, Statutory Instrument 2001 No. 2954
- <sup>iii</sup> British Standards Institution (December 2009) BS6031:2009 Code of Practice for Earthworks
- <sup>iv</sup> British Standards Institution (December 2004) BS EN 1997-1:2004 Eurocode 7. Geotechnical Design. General Rules.
- <sup>v</sup> British Standards Institution (2002) BS EN 1990: 2002 Basis of Structural Design