

APPENDIX 5.2
OUTLINE DECOMMISSIONING ENVIRONMENTAL MANAGEMENT
PLAN

Alleston Solar Farm
Outline Decommissioning Environmental Management Plan

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1 Introduction

1.1 Overview

- 1.1.1 This outline Decommissioning Environmental Management Plan (oDEMP) 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). The Site Boundary Plan can be found at Figure 1.1 of the ES.
- 1.1.2 This oDEMP first provides an overview of the Site, its surroundings and Development (Section 2), before detailing an overview of the decommissioning processes and practices (Section 3) with the oDEMP then concluded (Section 4). The oDEMP 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 DEMP, 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 decommissioning.

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 Boundary Plan (Figure 1.1 of the ES) 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 variations just described 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 should be timed for the summer period, following the guidance in the outline Soil Resources Management Plan.

2.2.5 During the operational period there will be no requirement for large or heavy machinery to access the land. Management and maintenance machinery will include grass cutting and vegetation management machines, which will generally be small and light. 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. Overall vehicle trafficking will be low compared to current agricultural uses.

Decommissioning

- 2.2.6 When the PV array is to be decommissioned after 40 years of operation, the above and below ground elements will be removed from the Site and the land can be restored to agricultural use.

3 Outline Decommissioning and Environmental Management Plan

3.1 Decommissioning Approach and Phasing

- 3.1.1 Following the operational period of 40 years, the Development will be decommissioned, and the Site could be returned to its current agricultural use. The decommissioning process is anticipated to last approximately 9 months.
- 3.1.2 All solar array infrastructure including modules, mounting structures, above and below ground cabling, inverters and transformers would be removed and recycled or disposed of in accordance with good practice. The future of the electrical compound including the substation and the energy storage facility would be discussed with the distribution network operator and agreed with the landowner and PCC prior to commencement of decommissioning.
- 3.1.3 These works would be undertaken according to legislation, regulations and best practice that are current at the time of decommissioning.
- 3.1.4 The decommissioning programme will likely involve the following steps:
- Panel dismantling;
 - Panel support removal;
 - CCTV infrastructure removal;
 - Substation, MV transformer stations, inverters and pile removal; and
 - Fencing removal.

3.2 Completion Works

- 3.2.1 Similar measures as detailed within the oCEMP (Appendix 5.1) and Construction Traffic Management Plan (CTMP) (within the Transport Statement) will be implemented for the duration of the decommissioning works as effects are expected to be similar to those of the construction phase. Key measures are outlined below.

Details of Proposed Storage of Materials

- 3.2.2 Any materials will be stored only for a short time period prior to removal.
- 3.2.3 Any 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 decommissioning compound areas will be kept to a good standard of tidiness.

Temporary Site Lighting

- 3.2.4 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

- 3.2.5 Traffic associated with decommissioning will be managed to ensure that the 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.
- 3.2.6 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.
- 3.2.7 Dust suppression measures will include sand and other aggregates are stored in bunded area and, where possible, not allowed to dry out, avoid dry sweeping of large areas and ensure surfacing equipment is only operated with any manufacturer's dust measurements in place, such as dampening down.
- 3.2.8 Decommissioning – related traffic will be limited to 20mph for delivery vehicles entering the Site to minimise dust, however, should dust accumulative at times of dry weather, roads will be dampened.

Details of Emergency Procedures and Pollution Response Plans

- 3.2.9 Emergency contact details, and a complaints / comments details 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.
- 3.2.10 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

- 3.2.11 Good working practices will be implemented to ensure soil structure is not damaged as a result of trafficking or removal of cables, 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 for the replacement of soils when cabling is 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 inverter bases, these areas will be capable of restoration on decommissioning. Access to all farmed areas within the Site will be retained throughout the decommissioning period.

Decommissioning Noise Mitigation

- 3.2.12 Decommissioning activities can give rise to noise. During decommissioning, noise levels are anticipated to be far less than construction as there will be no piling activities. However, 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

- 3.2.13 Temporary drainage infrastructure will be installed to manage and regulate surface water run-off during the decommissioning period.
- 3.2.14 All Site works will be undertaken in accordance with CIRIA (2011) Control of Water Pollution from Construction Sitesⁱ which promotes environmental good practice for control of water pollution arising from construction activities. Works will also be taken in accordance with any other relevant and updated legislation at the time of decommissioning.

- 3.2.15 Vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. 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.
- 3.2.16 In accordance with the Control of Pollution (Oil Storage) (Wales) Regulations 2016ⁱⁱ, 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. No underground storage tanks will be used during the decommissioning period. 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"ⁱⁱⁱ, which details methods that should be considered for the general control of drainage on construction sites and is also relevant to decommissioning. Further advice is contained within the Geotechnical Design, General Rules (BS EN 1997)^{iv} which should be read in conjunction with Basis of Structural Design (BE EN 1990)^v.

Waste Management

- 3.2.17 The decommissioning phase of the Development will be conducted in such a way as to minimise the creation for waste. Any waste material arising from the Site preparation activities suitable for reuse will be retained where possible. Recyclability will be increased by segregating decommissioning waste to be re-used and recycled where reasonably practicable.

Hours of Work

- 3.2.18 Working hours on the Site will be agreed with PCC through the detailed DEMP. However, it is anticipated that 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.
- 3.2.19 All work outside these hours will be subject to prior agreement of, and/or reasonable notice to PCC, as appropriate.
- 3.2.20 Night-time working will be restricted to exceptional circumstances and work internally within buildings. By arrangement, there may be some out of hours deliveries made to the Site.

Ecological Clerk of Works

- 3.2.21 An appropriately experienced/licenced ecological clerk of works (ECoW) will be appointed to advise on relevant environmental commitments in advance of decommissioning. A Site walkover will be undertaken no more than 1-2 years prior to decommissioning to inform the ecological baseline conditions and identify important ecological features and associated potential risks associated with decommissioning activities. As a minimum, an extended Phase I habitat survey (or equivalent) will be required to identify the potential presence of protected species and important habitats. Further species-specific surveys may be required depending on findings and anticipated impacts. These surveys will inform any additional mitigation and/or compensatory measures that may be required.
- 3.2.22 At the point of commencement of works, a toolbox talk will likely be required to be delivered by the ECoW to all relevant site personnel. This will detail any identified ecological constraints, relevant legislation and

associated legal requirements and order of works to remain compliant. Further ECoW attendance would likely be required during decommissioning works undertaken in proximity to sensitive habitats and features in order to ensure legal compliance and avoidance of harm. The ECoW would ensure that pre-arranged mitigation is undertaken and records are kept.

- 3.2.23 Standard management measures, as detailed under the above subheadings, will be implemented to prevent pollution incidents, minimise effects on ecological receptors from noise and vibration, prevent and minimise dust creation and air and water pollution. Precautionary working method statements will be produced, controlled, implemented and monitored.
- 3.2.24 Further potential mitigation measures (based on current legislation and anticipated presence of protected species) to be adopted during decommissioning include:
- i. **Nesting and breeding birds;** measures will be implemented to mitigate for impacts to nesting and breeding birds. Where reasonably practicable, vegetation clearance works will be undertaken outside of the bird breeding season (March-August, inclusive).
 - ii. **Reptiles and amphibians;** reasonable measures would be used during clearance of habitat suitable for reptile and amphibian species, encouraging animals to move away from impacted areas to more suitable, adjacent habitat.
 - iii. **Badger;** implementation of an appropriate buffer of between 10-30m around a badger sett (depending on status of the sett and anticipated impacts) during works.
 - iv. **Bats;** implementation of an appropriate buffer of no less than 8m (or root protection area if larger) around trees with bat roost potential or identified bat roosts during works. Implementation of sensitive lighting strategy during works.
 - v. **Dormouse;** avoidance of removal of habitat suitable for use by dormice or, where this is not possible, a licence issued by NRW may be required.
 - vi. **Otter;** implementation of a buffer of at least 8m from all watercourses, implementation of good practices and pollution prevention measures, and implementation of a traffic management plan.
 - vii. **Water vole;** implementation of a buffer of at least 8m from all watercourses or, where this is not possible, a licence issued by NRW may be required.
 - viii. **Invasive species;** Pre-decommissioning surveys will be undertaken to provide an update on the presence and location of any invasive species, which will help to inform the production of Biosecurity Management Plan (if required).

4 Conclusions

- 4.1.1 This oDEMP has been prepared to support the proposed decommissioning 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 processes and practices to be implemented during the decommissioning of the Development. Through the implementation of measures set out the decommissioning works can be undertaken in accordance with the principles set out in the application, supporting documents and Environmental Statement to safeguard the amenity of local residents, ecology, geology and the environment.
- 4.1.3 It is therefore concluded this oDEMP sets out in sufficient detail the general decommissioning approach. A detailed DEMP would be secured by condition prior to decommissioning commencing.

References

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