

3 SITE AND DEVELOPMENT DESCRIPTION

Site Context

- 3.1 The Site is located on land at Alleston Farm, Lower Lamphey Road, Lamphey, Pembrokeshire (see Figure 1.1) 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.
- 3.2 Residential dwellings within Pembroke town lie 190m north-west of the Site whilst the village of Lamphey is located 370m to the north-east of the Site.
- 3.3 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.

Site Description

- 3.4 The Site encompasses approximately 96 hectares (ha) and comprises of several 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, together with its associated buildings is located within the centre of the Site and is accessed from the north along Lower Lamphey Road and the west along Watery Lane, both unnamed tracks. Within the eastern region of the Site are a collection of fields 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.
- 3.5 In terms of topography, the Site slopes downwards from highpoints in south and west (approximately 55m Above Ordnance Datum) towards the north and east. There are two unnamed watercourses located in the north of the Site, as well as a watercourse running alongside the southwestern boundary.
- 3.6 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 is proposed to be diverted to the southwestern edge of the farm's boundary via a Secondary Consent submitted alongside the main application.

Environmental Baseline Conditions

- 3.7 The environmental constraints on the Site and in its close proximity can be seen in Figure 3.2 (Environmental Constraints Plan). An overview of the constraints with respect to each technical discipline is provided below.

Heritage

- 3.8 There are no World Heritage Sites or Scheduled Monuments within or adjacent to the Site, and the Site is not located within a Conservation Area.
- 3.9 As above, Alleston Farmhouse, a Grade II Listed building, together with its associated buildings is located within the centre of the Site. Lamphey and Bishop's Palace & Lamphey Court, a Grade II* Registered Historic Park and Garden, is located approximately 230m north of the Site. Additionally, Bishop's Palace, Lamphey, a Scheduled Monument is located approximately 630m north of the Site and the Lamphey Bishop's Palace & Lamphey Court, Grade II* Listed Building, is located approximately

640m north of the Site. An additional Grade II* Listed Building, Kingston Farm is located approximately 1.2km south-west of the Site.

Biodiversity and Landscape

- 3.10 The Site is not covered by any international or national ecological, landscape or heritage designations. Pembrokeshire Coast National Park is located approximately 300m east of the Site, beyond the B4584.
- 3.11 Statutory ecological designations within 2km of the Site include:
- Freshwater East Local Nature Reserve (LNR), 1.4km south-east of the Site;
 - Freshwater East Cliffs to Skrinkle Haven Site of Special Scientific Interest (SSSI), 1.4km south-east;
 - Pembroke Mill Ponds LNR, 1.5km north-west;
 - Stackpole Quay-Trewent Point SSSI, 1.5km south;
 - Milford Haven Waterway SSSI, 1.9km north-west;
 - Pembrokeshire Marine Special Area of Conservation (SAC), 1.4km south-east; and
 - Bristol Channel Approaches SAC, 1.5km south-east.
- 3.12 Internationally designated ecological Sites within 10km of the Site include the two SACs listed above and the following additional sites:
- Pembrokeshire Bat Sites and Bosherton Lakes SAC, 3.8km south-west and comprising five SSSIs within 5km;
 - Skomer, Skokholm and the Seas of Pembrokeshire Special Protection Area (SPA), 4km south;
 - Limestone Coast of South West Wales SAC, 4.2km south-west; and
 - Castlemartin Coast SPA, 4.2km south-west.

Drainage and Flood Risk

- 3.13 As stated above, two unnamed watercourses are located in the northern region of the Site and another watercourse is located along the south western boundary of the Site. Areas in close proximity to the watercourses have elevated food risk categorised as high and medium on the Natural Resources Wales Flood and Coastal Erosion Risk Mapsⁱ.

Agricultural Land

- 3.14 Agricultural Land Classification (ALC) mappingⁱⁱ undertaken for the Site has identified Best and Most Versatile (BMV) Land within the Site of Grades 2 and 3a, as well as non-BMV land within Grade 3b. The areas considered to be Grade 2 are exclusively within the northern region of the Site. The Site was surveyed in April 2023 and January 2024 by Amet Property to assess the agricultural quality of the Site. The survey (Appendix 8.1) found the Site to comprise 7.3 ha of Grade 2 land, 34.9 ha of Grade 3a land, 46.4 ha of Grade 3b land and 6.4 ha of non-agricultural land. Therefore, the Site has been assessed to contain 42.2 ha of BMV land, however only approximately 8.5ha of BMV will be affected by solar PV arrays and associated infrastructure (see Chapter 8 Agricultural Land and Soils).

Air Quality

- 3.15 The Site is not located within or in close proximity to an Air Quality Management Area (AQMA). The nearest AQMA is 'AQMA NO.2 2012' declared by PCC in 2012 for exceedances of national objectives of Nitrogen Dioxide.

The Development

- 3.16 A Development of National Significance (DNS) application is proposed for the construction, temporary operation, and decommissioning of approximately 30 MW solar farm and associated equipment such as inverters, transformer stations, substation, fencing, CCTV, weather monitoring stations and cabling (see Figure 3.3 Site Layout Plan). The solar farm will connect to the grid via a 132kV overhead wooden pole, located within the site. The solar farm development will have an operational lifespan of 40 years from the date of first export of electricity, after which it will be decommissioned.
- 3.17 The solar photovoltaic (PV) panels will have an anti-reflective coating. They will be ground mounted to a piled frame made of galvanized steel or aluminium. The PV panels will be crystalline silicon. Either monofacial or bifacial modules will be used.
- 3.18 The photovoltaic modules will be installed on a fixed tilt structure, facing south. As to 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.
- 3.19 The variations just described will not be noticeable to viewers looking into the Site.
- 3.20 The mounting posts for the support structure are pile driven into the ground at a depth of 0.5–4.5 metres below ground level, depending on the ground condition, the optimum pile depth will be determined by a survey to be carried out prior to construction.
- 3.21 CCTV cameras will be mounted on posts up to 5m high, and positioned at appropriate intervals to ensure that the entire perimeter fence is monitored. Up to 3 weather stations will be installed to measure performance and these will be up to 5m in height.
- 3.22 The perimeter fencing for the development will consist of deer type security fencing and gates, of approximately 2m high. The fence will be offset by 100mm from the ground to allow passage of small animals and will include mammal gates at appropriate intervals.
- 3.23 Internal tracks to allow vehicular access between fields will be constructed of compacted crushed stone, utilising existing internal gateways/gaps where possible. For single tracks, the width typically ranges between 3.5-4 metres whereas a 2-way track would be up to 6 metres wide. PRoW SP32/51/2 will be diverted to the southwestern edge of the farm's boundary via a Secondary Consent submitted alongside the main application. Chapter 7 (Landscape and Visual Effects) of the Environmental Statement (ES) outlines the proposed planting and the ecological enhancement measures that are proposed as part of the Development.

Substation and High Voltage (HV) Compound

- 3.24 A HV substation compound will be located in the centre (~51.665852, -4.890311) of the site and will provide the infrastructure to connect the solar farm to the electrical grid via a 132kV overhead line within the Site area. The substation/HV compound, will be surrounded by a palisade fence with an electric fence and additional stock fence (approximately 2-3m high). Furthermore, a communication mast is potentially required to service the substation. The mast would not be a prominent feature and details can be provided prior to development commencing, if necessary.

Medium Voltage (MV) Switchgear Room and Edge of Park Switchgear Station

- 3.25 The MV switchgear room accommodates monitoring equipment and the switchgear panels to protect the equipment and allow safe isolation of the MV electrical circuits.

Monitoring and Control building

- 3.26 A monitoring cabin/building will be located next to the HV Compound. The cabin will house the telecommunications/control/SCADA (Supervisory Control and Data Acquisition) and security system equipment (CCTV), to enable 24-hour remote monitoring of the Site to identify any faults and to relay CCTV footage to an external security company.

Temporary Construction Compound

- 3.27 There are two construction compounds proposed within the Site, providing an area for temporary storage, unloading of trucks and the necessary parking and welfare facilities for the workers onsite will be installed and subsequently removed once the construction has been completed. One of which will predominantly be used for the substation infrastructure and the other for the whole site, more centrally located.
- 3.28 The road layout would allow sufficient room for delivery vehicles to manoeuvre, unload their cargoes and exit in a forward gear. The compound would provide parking for light vehicles and HGVs undertaking deliveries to unload. A temporary permeable stone surface will be used for the compound.

Storage Containers

- 3.29 Two 40ft shipping containers will be installed to provide storage space for the solar farm.

Grid Connection

- 3.30 Onsite grid connection will be achieved via a 132kV overhead line (OHL). Alleston Farm will connect to the Pembroke GSP (Grid Supply Point) via a tee-in arrangement at or near pole 82 of the Pembroke to Golden Hill 132kV circuit located within the site. A new 132kV circuit, underground cable (UGC), will be constructed between this point of connection and Alleston Farm.

Operation

- 3.31 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. These will be infrequent and it is not anticipated that any soil will be removed from the Site. 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.
- 3.32 During the operational period there will be maintenance and management to include module cleaning (typically annually via a tractor towing a water tank). 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 lower than existing for the agricultural uses.

Decommissioning

- 3.33 Following the operational period of 40 years, the Development will be decommissioned, and the Site could be returned to its current agricultural use. All solar array infrastructure including modules, mounting structures, cabling, inverters and transformers would be removed and recycled or disposed of in accordance with good practice available at the time. Additional measures of the decommissioning phases have been recommended and detailed within Chapter 5 and the oDEMP (Appendix 5.2).

REFERENCES

ⁱ Available at: <https://flood-risk-maps.naturalresources.wales/?locale=en>

ⁱⁱ Available at: <https://www.gov.wales/agricultural-land-classification-predictive-map>