Great Harmeston Solar Farm

Environmental Statement

Chapter 4 Proposed Development and Alternatives

Development of National Significance
Pre-Application Consultation

March 2026

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4. Proposed Development and Alternatives

4.1. Introduction

4.1.1. This chapter of the ES sets out the description of the Proposed Development, indicative construction methodology and identifies the main alternatives to the Proposed Development that have been considered and the main reasons for selecting the chosen option.

4.1.2. This ES Chapter is supported by the following technical appendices:

- **Appendix 4.1 Outline Construction Environmental Management Plan**
- **Appendix 4.2 Outline Construction Biodiversity Management Plan**

4.1.3. This ES Chapter is supported by the following figures:

- **Figure 4.1 Site Layout Plan** HSF-RHL-V1-00-CM-Y- 0002 -S0- P09.
- **Figure 4.2 General Arrangement Drawing Pack, comprising**
    - Access Roads FSF-RHL-V1-00-CM-Y- 0006 -S0- P01
    - Perimeter Fencing FSF-RHL-V1-00-CM-Y- 0011 -S0- P02
    - Security and Met Data FSF-RHL-V1-00-CM-Y- 0009 -S0- P01
    - Typical Temporary Construction Compound
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    - Site Substation FSF-RHL-V1-00-CM-Y- 0015 -S0- P01
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    - PV Modules and Mounting Structure FSF-RHL-V1-00-CM-Y- 0013 -S0- P02
    - Outdoor Aux Equipment FSF-RHL-V1-00-CM-Y- 0007 -S0- P00
    - Perimeter Fence and Maintenance FSF-RHL-V1-00-CM-Y- 0014 -S0- P01
    - Site Storage FSF-RHL-V1-00-CM-Y- 0016 -S0- P01

- **Figure 4.3 – Access Plan**

4.2. Proposed Development

4.2.1. The main element of the Proposed Development is the construction, operation, maintenance and decommissioning of a ground mounted solar farm with an intended design generation capacity of up to 65 mega-watts alternating current (MWac). The electricity generated would be enough to power the equivalent of up to 34,444 typical family homes per year, helping to cut carbon emissions and support the transitions away from fossil fuels. The Proposed Development would also result in the reduction of carbon dioxide emissions of over 11,532 tonnes of CO_2 per year.[1]

4.2.2. This Proposed Development description is used to inform the environmental assessments which are detailed in ES Chapters 5 – 9.

4.2.3. Key components of the Proposed Development include:

- Solar photovoltaic ("PV") fixed panels mounted on a simple metal framework;
- Associated infrastructure including access tracks, parking, CCTV, gates and fencing, lighting drainage infrastructure, storage containers, earthworks, culverts, surface water management, maintenance and welfare facilities, security cabins and any other works identified as necessary to enable the development
- On-site 132kV Substation compound;
- Underground cabling to connect and transmit electricity from the solar PV modules to the on-site 132kV substation.
- Underground cabling connecting the 132kV on-site substation to the existing overhead 132kV powerline located to the south of the main development site.
- A number of central inverters (inverters and transformers housed together in prefabricated containers) at various locations around the arrays;

[1] [1]Source: Homes: 65MWac / 2700kWh (average UK home) = 34,444. CO2: 65MWac solar scheme based on a reasonable expected yield of 1,000 kWh/kWp/year and a carbon intensity of 0.124 kg CO2/kWh per the 2023 BEIS dataset = 11,532

- Boundary fencing (e.g. deer fencing) around the edge of the solar farm at a maximum height of 2.4m above original ground level;
- A CCTV system, either pole or fence-mounted, located at strategic points around the site perimeter for security and maintenance reasons, maximum height of 4m;
- Associated internal service tracks;
- Relevant communications (potential communications mast up to 15m) and monitoring equipment in substation area;
- Landscaping and biodiversity enhancements;
- Temporary development during the construction phase including construction compounds, parking, and temporary internal access tracks; and
- A number of separate access points into the Site for construction, operation and decommissioning purposes, predominantly utilising existing farm access points.

4.2.4. The Proposed Development site layout is shown on **Figure 4.1**, with mitigation measures (landscape and ecology) detailed on the Planting Plan in **ES Chapter 5, Figure 5.3.**

4.2.5. Detailed technical drawings of the various Proposed Development components are provided in the drawing pack at **Figure 4.2**.

4.3. Design Parameters and the Rochdale Envelope

4.3.1. The design of the Proposed Development has been refined throughout the EIA process. It is recognised that parts of the Proposed Development design and construction methodology, as presented, may be subject to further refinement and optimisation prior to and during construction. This is very pertinent to solar development due to the rapid pace of change in technology. For example, as technology advances, it is possible that solar PV panels could become more efficient, which could result in a potential reduction in total panel area required to deliver the same amount of generation. This in turn could require the micro-siting of panels and the associated equipment and infrastructure to reflect such changes, i.e., the final alignments of cabling and the number and location of panels, substation, inverters and transformers.

4.3.2. This EIA has employed a maximum (or minimum where appropriate) design scenario. A 'worst case' scenario approach to the environmental impact of a

Proposed Development and allows for a broad definition of the project to be framed within a number of set parameters. The submitted site layout (**Figure 4.1**) is therefore indicative as the detailed layout and phasing of construction will be agreed with the Local Planning Authority (LPA) by way of planning condition following grant of planning permission. The final detailed layout will demonstrate how the final 'as-build' design remains within the parameters of the design principles considered by this ES.

Buffer Zones

4.3.3. A number of buffer zones have been established to protect valuable natural resources, including trees and ecologically important field margins. The following minimum buffers have been adopted as standard as part of the design of the Proposed Development:

- 10m from ordinary watercourses
- 5m from hedges and trees but further depending on root protection areas (RPA)
- 30m from any badger setts
- For 132 kV lines: minimum 12–15 m horizontal clearance from conductors

4.4. Components of the Proposed Development

4.4.1. The design parameters for each component of the Proposed Development are detailed within the following sections. These have been used to inform the assessment detailed within this ES.

Solar PV panels and framework

4.4.2. The solar PV panels generate electrical power by converting solar irradiance into direct current (DC) electricity. A solar PV panel consists of a layer of silicon cells, an anodised aluminium frame and various wiring to allow current to flow from the silicon cells. Silicon is a non-metal with conductive properties that allow it to absorb and convert sunlight into electricity. When light interacts with a silicon cell, it causes electrons to be set into motion, which initiates a flow of electric current.

4.4.3. The solar PV panels will be a maximum of 3m in height above ground level (AGL), on a fixed framework. The minimum height of the lowest part of the solar panels (i.e. not including the mounting structure) will be 0.8m AGL, at a fixed orientation

and tilt angle between 10-25°, facing due south. There will be a distance of approximately 3.5m between the solar PV panels of each parallel row, responding to topography.

4.4.4. For the fixed system the mounting structure will be supported at intervals by double mounted posts. The posts will be pushed into the ground with a small plant rig, to depths of approximately 1.5m and this will be guided by localised ground conditions. The rest of the mounting frame would then be fitted to the posts to create angled support tables ready for the solar PV panel installation.

4.4.5. Depending on ground conditions, the posts may be mounted to ballast slabs. If any areas of archaeological interest are identified within the work area, then consideration will be given to the use of non-intrusive installation method, where the posts will be fixed into concrete pads resting on top of the ground. However, there is currently no identified need for this method within the site.

4.4.6. The solar PV panels would be preconstructed to help minimise on-site construction activity.

4.4.7. Land between and beneath the solar PV panels would be used for biodiversity enhancements including wildflower and grass mix seeding and potentially for seasonal sheep grazing for maintenance. There will be land available outside of the panel areas dedicated specifically for skylark mitigation enhancement areas. Mechanical cutting may also be deployed to manage the grass outside of ecological mitigation enhancement areas.

4.4.8. An illustrative figure for the solar PV panels is provided in the General Arrangement Drawing Pack at **Figure 4.2.**

String Inverters and Inverter Transformer Stations

4.4.9. String inverters take direct current (DC), as generated by the solar PV panels, and convert it into alternating current (AC) to enable the on-site generated electricity to be transferred to the on-site substation and in turn to the local electricity distribution network. The design of string inverters varies between manufactures, but they are typically approximately 1.1 m wide × 1 m high × 0.5 m deep and attach to the end of panel rows. An approximate 200 string inverters and 90 inverter / transformer stations are anticipated to be spread across the solar PV panelled areas. Due to the continuing advances in solar technology, it is not possible to specify the precise type of inverter at this time, as this will depend on the detailed electrical design and competitive procurement process. However, final details could be controlled through suitably worded planning conditions requiring the final details to be submitted for approval.

Electrical Cabling and Point of Connection

4.4.10. The solar PV panels will be connected in strings and insulated cabling will be routed in channels fixed on the underside of the mounting frame. before being taken below ground. The 33kv electrical cabling from the arrays will be concealed in shallow trenches linking the solar panels to the inverters / transformers and then to the 132kV on-site substation. The dimensions and depth of the trenches would vary depending on the amount of cabling and ground conditions, typically they would be up to 1m in depth and 0.5m wide. The cable trench may also carry earthing and communications cables and will be backfilled with fine sands and excavated materials to the original ground level. Where the solar panels straddle both sides of the existing railway line, two options for the connecting cabling are put forward. Option 'A' is to directional drilling the cable under the railway line. Option 'B' is to lay the cable in an open-cut trench along a section of the A477 and the A477 bridge (or its service duct) which crosses the railway line.

4.4.11. The underground cabling connecting the 132kV on-site substation to the existing overhead 132kV powerline would be laid by open-cut trench. At the pointy of connection, there may be upgrade works required to the existing pylon to facilitate the connection works.

4.4.12. The construction process will follow a soil management plan to ensure that the soil structure and quality are not degraded as part of the construction process, an Outline Soil Management Plan is included within the Outline CEMP (**Appendix 4.1**) submitted as part of the DNS application.

4.4.13. The underground cables will be located in existing gaps in hedgerows wherever feasible, however this assessment assumes the loss of some hedgerows as a worst case. Hedgerow to be removed are included within **Appendix 5.5 Arboricultural Impact Assessment**.

4.4.14. It is anticipated that underground cabling would be left in-situ during the decommissioning phase to avoid unnecessary ground disturbance.

Substation Compound

4.4.15. The design provides for an onsite 132kV substation and compound which is necessary to step up the voltage of the electricity delivered by the solar PV panels from 33kV to 132kV, and connect into the National Grid.

4.4.16. The onsite 132kV substation compound would have a footprint area of between approximately 15m^2 and 25m^2 and a below eaves height of 3m.

4.4.17. The onsite 132kV substation compound would be gated with security fencing, with a 2.4m high palisade fencing.

4.4.18. Except for the concrete foundations for the various equipment components, the onsite 132kV substation compound would comprise ground that would be permeable to surface water.

4.4.19. Whilst downward facing external lighting will be installed at the onsite 132kV substation compound for emergency work during hours of darkness, the substation will not be continuously lit.

4.4.20. The final design for the substation would be subject to agreement with the DNO.

Construction Access

4.4.21. The site is served by a number of existing access points, the locations of which are shown in **Figure 4.3**. A summary of each access point (A to J) is provided below. The access points generally provide access to agricultural fields or buildings and are therefore associated with existing large agricultural vehicle movements, however, where necessary modifications will be made as outlined within Construction Traffic Management Plan submitted as part of this DNS Application.

There is only one access (Access K) that will form a new access proposed to be located approximately 380 metres south of Access J.

<u>Western Parcel (served from The A4076 Milford Road)</u>

Access A

4.5. Access A is located approximately 1.45 kilometres south of the 'Sunnycroft' roundabout, accessed on the western side of the A4076 Milford Road. It measures approximately 15 metres wide where it meets the A4076 Milford Road, narrowing to a fieldgate with an access track width of approximately four metres. It has a tarmacked surface and there are parapet walls either side of the fieldgate. The access serves agricultural buildings.

Access B

4.6. Access B is located approximately 1.1 kilometres south of the 'Sunnycroft' roundabout, accessed on the western side of the A4076 Milford Road. It measures approximately 17 metres wide where it meets the A4076 Milford Road, narrowing to a track width of approximately eight metres. It has a tarmacked surface and a field gate is set back approximately 25 metres from the carriageway. The access serves an agricultural field and a wind turbine.

Access C

4.7. Access C is located approximately 570 metres south of the 'Sunnycroft' roundabout, accessed on the western side of the A4076 Milford Road. It measures approximately 20 metres wide where it meets the A4076 Milford Road, narrowing to a track width of approximately four metres. It has a tarmacked surface and serves an agricultural building and fields.

Access D

4.8. Access D is located approximately 490 metres south of the 'Sunnycroft' roundabout, accessed on the western side of the A4076 Milford Road. It comprises a four metre wide field gate setback approximately six metres from the A4076 Milford Road carriageway. The access serves an agricultural field. There is a telegraph pole to the north of the fieldgate.

Eastern Parcel (served from A477)

Access E

4.9. Access E is located approximately 90 metres east of the 'Sunnycroft' roundabout and 15 metres west of the Hayston View junction, accessed on the western side of the A477. It has a tarmac surface up to the rear of the highway verge where it meets a field gate which measures approximately five metres wide. The access serves an agricultural field.

Access F

4.10. Access F is located approximately 150 metres southeast of the Hayston Road/ A477 junction, accessed on the eastern side of the A477. The access is unsurfaced and serves an agricultural field via a 7.4 metre wide gap in the hedgerow to the rear of the highway verge.

Access G

4.11. Access G is located approximately 350 metres southeast of the Hayston Road/ A477 junction, accessed on the western side of the A477. It is accessed from a small lay-by which acts as a taper for vehicles entering and exiting the fieldgate access to the rear of the lay-by. The access measures approximately four metres wide and serves an agricultural field.

Access H

4.12. Access H is located approximately 880 metres southeast of the Hayston Road/ A477 junction, accessed on the western side of the A477. It is accessed from a small lay-by, measures approximately five metres wide and serves an agricultural field.

Access I

4.13. Access I is located approximately 920 metres southeast of the Hayston Road/ A477 junction, accessed on the eastern side of the A477. It serves as the access to Auberon House and surrounding land. The bellmouth measures approximately 20 metres wide where it meets the A477.

4.14. There is a field gate access approximately 20 metres back from the A477 carriageway which serves an agricultural field. The fieldgate measures approximately five metres wide.

Access J

4.15. Access J is located approximately 970 metres southeast of the Hayston Road/ A477 junction, accessed on the western side of the A477. It serves as the access to Hayston Development & Planning and surrounding land. The bellmouth measures approximately 7.5 metres wide where it meets the A477, with the access track narrowing to approximately four metres wide 20 metres south of the bellmouth. There are stone ornaments either side of the bellmouth.

4.16. There is a field gate approximately 14 metres back from the A477 carriageway which serves an agricultural field. The field gate measures approximately five metres wide.

Access K (new access)

4.17. The access is proposed to measure five metres wide, with a 10 metre bellmouth radii on the northern side and a three metre bellmouth radii on the southern side of the access. Approximately six metres of hedgerow will be removed to accommodate the access. A visibility splay of 2.4 metres x 215 metres to the nearside kerbline to south is achievable. A maximum visibility splay of 2.4 metres x 152 metres is achievable to the nearside kerbline to the north, commensurate with 50mph vehicle speeds when based on DMRB stopping site distance calculations. Therefore, temporary traffic management will be provided in this location during the construction period.

4.18. Swept path assessments also show that 16.5 metre long HGVs can access and egress the junction to and from the north.

Operational Access

4.19. Once operational, the site will continue to be accessed from the A4076 Milford Road and the A477 via the access points described above. Security gates, hung to open inwards, will be installed to secure the site.

4.20. Once operational the solar farm will be associated with approximately two maintenance visits to the site per month, likely by a 4x4 type vehicle or a small van. These types of vehicles are already using the A4076 Milford Road and the A477.

4.21. Whilst the construction compounds will have been removed, space will remain within the site for vehicles to turn around to ensure that reversing onto the adjacent highways will not occur.

Access Tracks

4.21.1. Access to the Proposed Development during operation would be required for maintenance. Access to the Proposed Development is proposed through existing access points and one new access as described above. Once accessing the Site, the internal access tracks will connect into the various land parcels.

4.21.2. The Proposed Development would utilise existing farm track routes, where practicable, with new access tracks approximately 4.5m wide, created as required. The access tracks have been located so they utilise existing field gates between fields to reduce the impact on hedgerows where practicable. Inverter stations will be located off a number of these internal access tracks.

4.21.3. The access track would be made of permeable, crushed stone and formed by excavating 150mm and laying clean Type 1 aggregates. This in turn, would be laid on a compacted soil base, with a depth of 350 mm.

Public Right of Ways (PRoW)

4.21.4. Public Rights of Way (PRoW) footpath PP81/1 and bridleway PP81/2/abut the southern boundary of the eastern parcel of the Site. The footpath PP81/1 routes from the A477 eastward approximately 300 metres before meeting the bridleway PP81/2. The Bridleway PP81/2 routes from 3000 metres south along the A477 eastward, meeting the footpath PP81/1 and continuing eastward until it terminates at an unnamed road near Westfield. These PRoW provide access from the A477 in the west to The Old Rosemarket Road in the east.

Fencing and Security

4.21.5. Perimeter fencing will enclose the Site as illustrated on the Site Layout Plan **Figure 4.1**. Fencing will be deer/stock wire fencing approximately 2.4m in height with wooden posts piled into the ground. The fencing would be designed in such a way to allow small mammals to pass through and would also be gated to allow access to and from the Site.

4.21.6. The approximate distance between the edge of the solar PV panel areas and the deer fencing would be 5m.

4.21.7. Pole mounted Closed Circuit Television (CCTV) system, inwardly facing, will be deployed around the perimeter of the operational areas of the Site. These cameras will be mounted on poles of approximately up to 4m in height, located adjacent to the perimeter fencing. It is anticipated that the CCTV system would have motion detection technology for recording and pointed directly within the Site and away from any land outside of the Site.

4.21.8. No areas of the Proposed Development would be continuously lit during operation, however, security lighting would be required around key electrical infrastructure i.e. the onsite 132kV substation compound.

Temporary Construction Compounds

4.21.9. It is anticipated that there will be a number of temporary construction compounds located across the scheme which will be erected and removed during the construction of the different land parcels. The exact location of the compounds will be confirmed by the appointed contractor. The compounds will be of a suitable size for an articulated vehicle to enter and turn in a forward gear.

4.22. The indicative temporary construction compound layout would be 60 metres x 45 metres with an open landing area with a hard core surface, a secure storage area with perimeter timber hoarding, an office area with perimeter heras fencing and a site office and welfare facility.

4.23. A temporary car parking area (including spaces for minibuses) will be provided within the compound with nine parking spaces. Parking will therefore be contained within the site so that no unnecessary parking will occur on the local highway network. Visitors will be advised of the parking arrangements in advance of travelling to the site.

4.24. If ground conditions dictate, wheel washing facilities will be provided within the construction compounds to prevent vehicles depositing mud and dirt onto the local highway network.

4.24.1. The use of the temporary construction compounds could vary depending on the construction activities, however, likely uses include storage of equipment and material, construction worker welfare facilities, and deliveries.

4.24.2. At the end of the construction period the temporary construction compound would be decommissioned. During the operational phase, the areas used as temporary construction compounds phase will be returned to grassland and used for solar PV panel areas.

Drainage

4.24.3. A Flood Consequence Assessment and a Surface Water Drainage Strategy has been developed and sets out the outline drainage strategy for the Site. The documents outline how surface water will be managed in order to prevent any increase in flood risk. It describes measures to manage drainage from new infrastructure (e.g. solar PV panels, access tracks and areas of hardstanding across the Site) and manage any required changes to existing land drainage arrangements through use of sustainable drainage systems (SuDS) . The strategy will be developed into a detailed drainage strategy prior to construction.

4.24.4. Solar PV panels will allow rainwater to fall between gaps to the ground where it would percolate into the soil substrate. Although the solar PV panels will divert the downward path of falling rain, being raised off the ground on frames, they will not reduce the permeable area where they are sited.

4.24.5. Internal access tracks will be comprised of crushed aggregate maintaining a permeable nature and not increase the surface water runoff from the development.

4.24.6. The documents demonstrate that the Proposed Development will be safe for its lifetime (40 years) taking account of the vulnerability of its users, without increasing flood risk elsewhere.

Biodiversity and Landscaping

4.24.7. The Proposed Development presents considerable opportunity for landscape and biodiversity mitigation and enhancement. The Landscape and Biodiversity proposals are discussed in detail in the supporting **Outline Construction Biodiversity Management Plan (Outline CBMP) (Appendix 4.2).** It sets out measures for protection, retention, and establishment of new habitats, with measures to protect the species associated with these habitats. It also sets out measures for habitat management and enhancement, alongside schedules of maintenance.

4.24.8. In general, a number of measures and features are proposed for the benefit of biodiversity. This includes the planting of new hedgerows and bolstering of existing field boundaries to increase coverage of this habitat, provide effective landscape screening, and to improve connectivity of the hedgerow and woodland network across and beyond the Site.

4.24.9. Land between and beneath the solar PV panels would be used for biodiversity enhancements including dedicated skylark mitigation areas and potential for seasonal sheep grazing for maintenance. Mechanical cutting may also be deployed to manage the grass. In fields dedicated to skylark mitigation enhancement, management will be typical meadow management where the fields are not cut or grazed between early April and the end of May and subsequent cuts must be at least seven weeks apart to enable success of later nests which would provide optimal habitat for skylark nesting. Following a cut, arisings should be removed from the site to prevent build-up of nutrient levels in the grassland which will prevent smothering and enable new growth (see **Figure 5.3** Landscape Planting Plan for location of ecological mitigation and enhancement areas).

4.24.10. The final Outline CBMP will be agreed with the LPA by way of planning condition following grant of planning permission.

4.25. Construction Phase

4.25.1. The following section provides a summary of the key elements of the construction of the Proposed Development. Detailed consideration of potential effects during the construction process and any mitigation measures are provided in each relevant chapter of this ES.

4.25.2. Planning for construction is necessarily broad at this stage and may be subject to modification during the detailed design stage and in some instances when construction has commenced. Consequently, it has been necessary to predict some of the likely significant effects of the construction of the Proposed Development with the best possible degree of accuracy based on worst- case scenarios. The following description enables the principal construction phases and methods to be understood and assessed.

4.25.3. An **Outline Construction Environmental Management Plan (Outline CEMP**) and an **Outline Construction Biodiversity Management Plan** (Outline CBMP) have been developed for the construction phase of the development and is submitted as part of the DNS planning application (see **Appendix 4.1 and Appendix 4.2**).

Programme of Works

4.25.4. The construction phase of the Proposed Development is currently anticipated to span for up to 9 months. Completion and operation will be dependent on the grant of planning permission for the Proposed Development, final design and potential environmental constraints on the timing of construction activities.

Construction Activities

4.25.5. A summary of the likely construction programme is provided below, noting that many of the phases will not occur in isolation and are likely to take place concurrently:

Site Preparation

- Creation of access points onto the Site;
- The establishment of temporary construction compounds;
- Installation of security fencing, access gates and CCTV around the Site; and Erection of deer / stock fencing and gates to Site perimeter;
- Erection of 'Heras' fencing around tree root protection areas;
- Ground clearance activities;
- Construction of the internal access roads; and
- Delivery of construction materials and plant machinery required to construct the Proposed Development.

Infrastructure Construction

- Installation of solar PV panels and frames;
- Installation of security fencing and CCTV around solar PV panelled areas;
- Installation of string inverters and inverter stations;
- Installation of electric cabling;
- Installation of onsite 132kV substation and compound;
- Grid connection; and
- Reinstatement works, where necessary.

Testing and Commissioning

4.25.6. Following construction, the Proposed Development will 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.

Site Reinstatement and Habitat Creation

4.25.7. Following construction, specific elements will be removed related to the construction phase only of the Proposed Development (e.g. temporary construction compounds). These areas will be either allocated for solar PV panel infrastructure, reinstated to their use before construction began or incorporated into the proposed landscaping and ecological enhancements proposed as part of the Proposed Development.

Construction Methodology

Hours of Work

4.25.8. It is anticipated that the working hours will be as set out below:

- 07.00 – 18.00 Monday to Friday; and
- 07.00 – 13.00 Saturday
- No work on Sunday's or Bank Holidays

4.25.9. These working hours will be agreed with Pembrokeshire County Council (PCC) prior to the commencement of the works. All work outside these hours will be subject to prior agreement, and/or reasonable notice, by the relevant LPA's, who may impose certain restrictions. Night time working will be restricted to exceptional circumstances.

Construction Equipment

4.25.10. Construction equipment typically used to construct the Proposed Development included (but is not limited to):

- Excavators
- Mobile cranes
- Ready mix concrete wagons

- Concrete pumps
- Mobile piling rigs
- Dumper trucks
- Low loaders
- Power Generators
- Fuel and water bowsers
- Skips.

Construction Staff

4.25.11. It is estimated that there will be around 52 on-site jobs generated during the construction period (see **Chapter 9 Socio-Economics**), which is estimated to be up to 9-months. These on-site employment opportunities will support further jobs in the supply chain, which is known as the multiplier effect. In total, the Scheme could support 121 temporary jobs, both direct jobs on-site and indirect/induced roles in the wider economy, during the 9-month construction period.

Construction Control Measures

Construction Environmental Management

4.25.12. An Outline Construction Environmental Management Plan is submitted with this DNS planning application, setting out the measures, commitments and actions identified in the ES to manage environmental effects during construction. These measures, commitments and actions would be carried forward to a detailed CEMP.

4.25.13. The CEMP would be prepared and agreed with PCC by way of planning condition following grant of planning permission and in advance of the construction phase.

4.25.14. Likely measures within the detailed CEMP to eliminate, reduce or offset adverse environmental effects are identified below:

- The broad construction programme of the phasing of the work and the construction activities,
- Details of prohibited or restricted operations (for example locations, hours of operation etc.).

- Arrangements for the implementation of the CEMP and environmental monitoring, including responsibilities, the role of environmental authorities, and participation of stakeholders.
- A monitoring and supervision plan.
- A response plan in the event of accidents or otherwise unexpected events and potential risk register.
- Locations and protocol with regard to material storage and compounds, and
- Mitigation, management measures and monitoring measures in relation to environmental disciplines.

4.25.15. The establishment of agreed methods and procedures enables any prospective departures to be identified, the reasons understood and appropriate provisions made.

Management of sub-contractors

4.25.16. Individual contracts (for example for waste removal) will incorporate relevant requirements in respect of environmental control, based largely on the standard of 'good working practice' as well as Statutory Requirements. Potential sub-contractors will be required to demonstrate how they will achieve best practice, how targets will be met and how potential effects will be minimised.

Management of Construction Works

4.25.17. Contact details will be provided at the Application Site entrance and will be provided to PCC prior to the start of site activities, and whenever a change of responsibility occurs.

Responses to Complaints

4.25.18. Any complaints will be logged, where necessary. The procedures will specify the roles and responsibilities in respect of breaches and complaints from the public. The required actions will be different in each specific case, depending on the operation, equipment or location or applying additional controls.

Prior Notice

4.25.19. In the event of unusual activities or events that can be anticipated, these will be notified to the relevant LPA's and to the relevant property owners or occupiers wherever possible and neighbours, in advance of the activity.

Construction Traffic

4.25.20. A Construction Traffic Management Plan (CTMP) is submitted with this DNS planning application, detailing the measures to avoid and/or reduce impacts relating to construction traffic. It includes a routing strategy for construction traffic including HGVs, site access arrangements, construction vehicle movements, peak time restrictions for HGVs where possible, controls governing the movement of large and/or abnormal loads, construction worker travel plan and PRoW Management plan.

4.25.21. In regard to construction vehicle movements, it is anticipated between 14 to 21 deliveries will be made to the Site daily during typical periods of construction. It is forecast there would be up to 100 construction workers at peak where the majority would be expected to arrive by minibus to reduce the number of single occupancy vehicle trips by construction workers.

4.25.22. The workforce trips are anticipated to be tidal in nature, arriving in the morning and departing in the evening, this will be scheduled, where possible, to not overlap with the network peak hours.

4.25.23. The Construction Traffic Management Plan (CTMP) details this level of traffic during the construction phase is not considered to be material and it is considered that this will not have a detrimental impact on the safety or operation of the local or strategic highway network.

Waste Management, Recycling and Disposal

4.25.24. Waste will be generated during all stages of the construction works. Major sources of waste within the construction process include:

- Demolition spoil – concrete, brick rubble, steel, aluminium, plastics, wood etc.;
- Packaging – plastics, pallets, expanded foams etc;
- Waste materials generated from inaccurate ordering, poor usage, badly stored materials, poor handling, spillage etc; and
- Dirty water, for example from silt.

4.25.25. All relevant contractors will be required to investigate opportunities to minimise waste arisings at source and, where such waste generation is unavoidable, to maximise the recycling and reuse potential of demolition and construction materials. Wherever feasible, such arisings will be dealt with in a manner that

reduces environmental impact and maximises potential re-use of materials. Recycling of materials will largely take place off-site where noise and dust are less likely to result in impacts to the occupants of surrounding properties.

4.25.26. For those materials removed from the Application Site, notification by the Contractor/Construction Manager for approval (via consultation with PCC will take place). Loads will only be deposited at authorised waste treatment and disposal sites. Deposition will be in accordance with the requirements of the Environmental Agency, the Environmental Protection Act 1990, the Environmental Protection (Duty of Care) Regulations 1991, the Controlled Waste Regulations 1992, the Landfill (England and Wales) Regulations 2002 and the Landfill (England and Wales) (Amendment) Regulations 2004, Hazardous Waste (England and Wales) Regulations 2005 and the List of Wastes (England) Regulations 2005.

4.25.27. To ensure that only permitted and approved excavated (waste) materials are deposited and to prevent the occurrence of fly-tipping, a waste transfer note (WTN) system including rigorous Waste Acceptance Criteria (WAC) testing will be utilised in accordance with the Environmental Protection (Duty of Care) Regulations 1991 and the Environmental Permitting Regulations 2016. All contractor/sub-contractors used for waste management operations, will hold a current waste carriers licence and will operate a WTN system, to confirm that each load has been safely received at the approved licensed waste management disposal site and that the material matches the description on the WTN. Copies of the WTN are to be provided to the nominated manager, and available for inspection at the Application Site. In addition, direct routes via motorways/main roads to agreed disposal sites, will be approved through a Transport Plan and strictly enforced by the principal site contractor.

4.25.28. No burning of demolition or construction waste will be undertaken on the Application Site.

4.25.29. It is also expected that a Site Waste Management Plan (SWMP) would be prepared to set out the procedures to sort, reuse and recycle construction waste and would be subject to a suitably worded planning condition. Adherence to the SWMP would support better control over materials handling and waste, compliance with relevant waste legislation for the handling, transport and disposal of wastes, compliance with environmental management systems and management of waste-related costs.

Protection of Trees and Vegetation

4.25.30. Provision in BS5837: 2012 will be followed during the construction of the Proposed Development. All trees to be retained will be protected from any unnecessary damage.

4.25.31. All temporary material storage will be located wherever practical at adequate distances from vegetation and tree cover to avoid any physical damage. Where tree roots may be subject to potential vehicle compaction, additional temporary protection of the ground surface may be introduced.

Operational Phase

4.25.32. The design life of the Proposed Development is expected to be operational for a period of 40 years.

4.25.33. During operation of the Proposed Development, human activity on the Site will be minimal and would be restricted principally to:

- Landscaping and ecological management in accordance with the detailed CEMP and CBMP,
- equipment maintenance and servicing,
- replacement of any components that fail, and
- monitoring to ensure the continued effective operation of the Proposed Development.

4.25.34. It is anticipated that there will not be any permanent jobs on the Site. Rather than permanent staff working within the operational Proposed Development, there will be frequent visits made by off-site workers in a small van or similar to ensure that the Proposed Development is maintained properly.

4.25.35. Operational areas will be surrounded by perimeter fencing with pole-mounted CCTV cameras adjacent to the perimeter fencing for security.

4.25.36. Access to the Proposed Development during operation for maintenance activities would utilise all available access locations into the land parcels.

4.25.37. Land between and beneath the solar PV panels would be used for biodiversity enhancements including dedicated skylark mitigation areas and potential for seasonal sheep grazing for maintenance which would retain associate areas in productive agricultural use. Mechanical cutting may also be deployed to manage the grass. In fields dedicated to skylark mitigation enhancement, management will be typical meadow management.

4.25.38. Given the Proposed Development is operational for a maximum of 40 years, there will be a need potentially for some or all of the solar equipment to be replaced during the operational phase. The solar equipment would be disposed of following the waste hierarchy, with materials being reused of recycled wherever possible. Any electrical waste would be disposed of in accordance with the Waste from Electrical and Electronic Equipment (WEEE) Regulations 2013, minimising the environmental impact of the replacement of any elements of the Proposed Development.

Decommissioning Phase

4.25.39. The Proposed Development will be decommissioned at the end of its approved operational phase. Decommissioning is expected to take up to 9 months and could be undertaken in phases.

4.25.40. The effects of decommissioning are often similar to, or to a lesser magnitude, than the construction effects. The assessment undertaken for the decommissioning phase as part of the ES is based on assumptions as to how decommissioning would take place, and these assumptions are likely to change over time as practices for decommissioning evolve.

4.25.41. All above ground plant, machinery and equipment will be removed together with all perimeters fencing and any concrete hard standing. This includes but is not limited to all solar infrastructure (solar PV panels, mounting frames and supporting equipment) and cabling less than 1m below ground. Cabling buried more than 1m below ground is proposed to be left in situ.

4.25.42. The exception is the proposed onsite 132Kv substation (and ancillary security measures around the substation compound e.g., perimeter fencing, lighting and CCTV equipment) and associated access to the Substation will be retained on a permanent basis as this would remain as part of the essential National Grid distribution network infrastructure.

4.25.43. It is the intention that after the 40 years of operation, the Site will be available to revert to its current use and be used by the landowner for agricultural operations of their choice and determined by the global markets at that time. This will include the areas that will have been used for biodiversity mitigation over the lifetime of the Proposed Development. Any requirements to leave certain infrastructure, for example internal access tracks, would be discussed and agreed with landowners as part of the decommissioning process. It is assumed established habitats such as any tree and hedgerow planting, would be retained when handed back to landowners, who would then have the ability to do as they wish (within the

restrictions of the planning system) with their land. Following decommissioning, there may be a period of soil management aftercare.

4.25.44. Decommissioned items would be recycled or disposed of in accordance with good practice and market conditions at the time of decommissioning. As the majority of the equipment is classed as electrical it will fall under WEEE Regulations, designed to reduce the amount of waste electrical and electronic equipment incinerated or sent to landfill sites. Reduction is achieved through various measures which encourage the recovery, reuse and recycling of products and components.

4.25.45. Solar PV panels typically consist of glass, silicon, aluminum and a small percentage of copper, tin and lead. The glass and metals are readily recycled. Recycling of silicon is an emerging market but there are already specialist companies who offer this service. All other components of the Proposed Development are generally recyclable and general recycling rates for electrical equipment are in excess of 90%.

4.25.46. Prior to the commencement of decommissioning, a decommissioning plan will be prepared and the Site will be surveyed to identify ecological constraints. The decommissioning of the Proposed Development would be controlled by planning condition.

4.26. Alternatives

4.26.1. Regulation 17 (3)(d) of the EIA Regulations requires that the ES contain:

'a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'.

4.26.2. Additionally, paragraph 2 of Schedule 4 of the EIA Regulations requires that the ES contain:

'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'

4.26.3. This section of the ES therefore identifies the main alternatives to the Proposed Development which have been considered by the Applicant.

4.26.4. The main alternatives to the Proposed Development include:

- The 'No Development' Alternative;
- Alternative Locations;
- Alternative Designs; and
- Alternative Technologies

The 'No Development' Alternative

4.26.5. The 'No Development' Alternative refers to the option of leaving the Application Site in its current use and physical state, as set out in **ES Chapter 3 - The Application Site.**

4.26.6. Without development, it is anticipated that the Site would continue to be primarily in agricultural use. The agricultural processes on the Site may change over the next 40 years, depending on a number of factors, including the global market for products and chemical costs. As such, the significant impacts both adverse and beneficial that are highlighted in this ES would not occur.

4.26.7. The 'No Development' alternative would result in the loss of opportunity for providing much needed renewable energy generation within the UK. Under current legislation and policy, the Government has committed to fully decarbonising the power system by 2035, underpinning its 2050 net zero contributions. In the British Energy Security Strategy[2] there is the target of increasing the quantity of solar generation within the UK to 70GW by 2035. As of Q1 2025[3], the UK has an installed capacity of 18GW of solar operating within the UK, a four-fold increase would be required to meet the 2035 target.

4.26.8. The Proposed Development will have an export capacity of approximately 65MW. Should the Proposed Development not be taken forward, its energy-generating potential and potential carbon savings would not be recognised. The 'do nothing' alternative would result in the loss of the generation of this renewable energy. To achieve the UK Government solar targets will be challenging and so all opportunities and possible locations for solar farms need to be considered.

[2] Department for Energy Security & Net Zero (April 2022) Policy paper British energy security strategy
[3] Department for Energy Security & Net Zero (June 2025) Policy paper Solar roadmap: United Kingdom powered by solar

4.26.9. No further assessment has been undertaken for the 'no development' scenario because this option is not considered a reasonable alternative to the Proposed Development as it would not deliver the additional electricity generation proposed.

Alternative Locations

4.26.10. The Proposed Development must be located near to an existing grid connection to ensure that a viable development capable of generating renewable electricity that can be exported to the grid can be realised.

4.26.11. The PoC is located at the most southernly point on-site, through a buried underground cable and connecting to an overhead power line pole within the Site boundary. The renewable energy will be exported to the National Grid via connection to the existing 132kV overhead line which secures the capacity available on the grid for a fixed period of years for this form of generation.

4.26.12. The Site has been considered acceptable for the Proposed Development following the Site Selection Assessment submitted with the wider DNS planning application documentation, upon when the Applicant undertook a rigorous assessment of land available in close proximity to the point of connection that balanced both environmental constraints and the ability to deliver a large-scale solar farm, consistent with the opportunity provided by the existing point of connection and agreement. The process involved a review of land availability and suitability in the area surrounding the point of connection, a selection and assembly of land and refinement of land to produce the Site. It is clear from national policy that renewable energy including solar is urgently required and therefore an alternative use for the Site is not supported.

4.26.13. In order to focus the site selection process, an initial appropriate search area had to be defined. The Applicant identified optimal locations for solar farms of a nationally significant scale based on two key factors: the irradiance and yield; and the availability of grid connection capacity.

Irradiance and yield

4.26.14. Solar irradiance refers to the amount of energy from the sun that reaches the surface of the earth and is measured by the amount of sunlight received per square metre per second (Wh/m2). The amount of solar irradiance impacts on the potential yield of solar farm, affecting the amount of sunlight falling on the PV modules to be converted to energy. The irradiance and subsequent yield of an area is influenced by factors such as its location, climate/weather patterns, altitude and topography. Whilst there are clearly significant differences in such factors globally,

there are also national variations leading to some areas of the UK being more suited to solar energy than others.

4.26.15. Wales, particularly west and south Wales have irradiation levels that are conducive for large scale investment in solar farms, and as such form an integral part of the Applicant's investment programme. The region also has a significant amount of pre-existing transmission infrastructure, which would reduce the likelihood that any new overhead infrastructure would be required to connect the generator to the transmission system.

Consideration of Environmental Constraints

4.26.16. A search area for potential development sites involved a consideration of potential environmental constraints within the 10km Area of Search. A constraints mapping exercise was undertaken in order to assess potential locations for siting the Proposed Development within the Area of Search. This was undertaken using Geographic Information Systems (GIS) software.

4.26.17. The applicant adopted a sequential approach to identifying appropriate land for the proposed 65MW AC Great Harmeston Solar Farm in Pembrokeshire, Wales.

4.26.18. Unlike the National Planning Policy Framework (NPPF) in England, Welsh policy does not prescribe a formal sequential test for solar energy development outside of flooding considerations under TAN 15. However, PPW establishes a clear national commitment to renewable energy generation and decarbonisation, requiring planning authorities to facilitate renewable energy development in appropriate locations.

4.26.19. The Welsh Government does not place a quantitative cap on renewable energy development. Instead, it establishes a strong presumption in favour of renewable energy schemes where environmental and amenity impacts are acceptable or can be appropriately mitigated.

4.26.20. A summary of the factors considered in the site selection exercise are set out below:

- Deliverability and viability / developability;
- Grid availability;
- Avoidance of nationally and internationally designated environmental constraints;
- Compliance with national and local development plan policy; and

- The ability to mitigate environmental and amenity impacts

4.26.21. To be considered **deliverable**, sites should be:

- Available now; and
- Offer a suitable location for development now.

4.26.22. To be considered **developable**, sites should:

- Be in a suitable location for solar development;
- Have a reasonable prospect of being available; and
- Be capable of being viably and economically developed at the point envisaged.

4.26.23. In applying the sequential approach, the Applicant has considered a site to be suitable where it meets the following criteria:

- **Minimum site area of approximately 100 hectares (gross).** For a 65MW AC solar farm with associated infrastructure (including inverters, substations, internal access tracks, landscaping, biodiversity mitigation and buffers), a significantly smaller site would not accommodate the scheme efficiently or viably on a cost per megawatt basis. Where appropriate, parcels may be combined provided they are contiguous or functionally connected.
- **Proximity to viable grid connection infrastructure.** A key requirement for the Great Harmeston Solar Farm is the ability to connect to the existing overhead line that crosses the southern part of the site. The availability of an on-site overhead line connection significantly reduces the need for extensive off-site cabling works, minimises environmental effects, and materially improves project viability. Connection costs increase substantially with distance and voltage requirements; therefore, sites without feasible and cost-effective connection opportunities were discounted at an early stage.

4.26.24. Avoidance of key environmental and heritage designations, including:

- Ancient Woodland
- National, European and international environmental designations (including National Parks, National Landscapes, Special Areas of Conservation (SAC),

Special Protection Areas (SPA), RAMSAR sites, Sites of Special Scientific Interest (SSSI), National Nature Reserves and Biosphere Reserves)

- Heritage Coast
- Registered Parks and Gardens
- Scheduled Monuments
- Historic Battlefields
- RSPB Reserves
- Country Parks

4.26.25. **Ability to address physical, environmental and policy constraints**, including agricultural land classification, flood risk, landscape sensitivity, ecological value, existing infrastructure (such as pylons, overhead lines, trees, watercourses, railways and buildings), and relevant development plan policies.

4.26.26. With particular regard to agricultural land quality, the Predictive ALC map identifies that much of the wider area is predicted to be of BMV quality, including the Site. In the area between Johnston and Milford Haven, the Site lies in the poorest quality land available. This, along with the proximate grid connection, are the key reasons why approaches to the landowners were made in this case.

4.26.27. **Ability to address amenity considerations**, including potential visual, residential amenity and noise effects.

4.26.28. **Commercial viability**, including anticipated grid connection costs and landowner terms. Rental expectations vary considerably and form part of the overall deliverability assessment.

Grid Connection Capacity and Site Identification

4.26.29. One of the biggest constraints to be considered when developing a renewable energy scheme is securing a viable point of connection to the electricity network. Grid connection is of key importance to solar farm as the cost of grid connection can make potentially suitable sites, given environmental issues and irradiance levels, unviable. Additionally, in order to minimise potential environmental impacts associated with cable routes, and to minimise the potential for any transmission losses that may occur along longer lengths of cabling, it is preferable to locate a renewable energy development as close as reasonably practicable to the point of connection.

4.26.30. The need for large-scale solar development is directly linked to the availability of electricity grid capacity. National energy policy establishes a strong and urgent need for new renewable energy generation. The presence of available capacity in one location does not preclude development in other areas; rather, schemes must be brought forward where grid infrastructure can support timely delivery.

4.26.31. Grid analysis undertaken by the applicant identified the presence of a viable overhead line crossing land at Great Harmeston in Pembrokeshire. The ability to connect directly to existing on-site overhead line infrastructure is a critical factor in the site's suitability and deliverability. This materially reduces the requirement for off-site connection works and limits associated environmental and third-party land impacts.

4.26.32. Land referencing and engagement were undertaken with landowners within close proximity to the viable grid connection infrastructure to identify potentially suitable and available sites of sufficient scale (approximately 100 hectares or more). A few land parcels were initially identified as potentially suitable based on high-level planning, grid connection and environmental constraints mapping.

4.26.33. All relevant landowners were contacted. However, several landowners were not willing to bring their land forward for development. This process confirmed that what has now become the Great Harmeston application site has willing landowners with contiguous land parcels and met the suitability criteria set out above, including:

- Sufficient land area to accommodate a 65MW AC scheme;
- Direct access to on-site overhead line infrastructure;
- The ability to avoid or mitigate key environmental, agricultural land and heritage constraints; and
- A reasonable prospect of deliverability and economic viability.

4.26.34. Accordingly, Great Harmeston was progressed for detailed environmental assessment and scheme design.

4.26.35. In summary, the sequential site search has demonstrated that the proposed Great Harmeston Solar Farm represents a suitable, available, deliverable and developable location for a 65MW AC solar development in Pembrokeshire. The site's scale, grid connection opportunity via the existing on-site overhead line, relative lack of environmental constraints, and landowner agreement distinguish it from other land that could potentially have been progressed.

Alternative Designs

4.26.36. Initial concept designs were prepared and refined as the Site boundary and the Proposed Development was progressed in its formulative stages up to the 'design freeze' for this PAC Environmental Statement.

4.26.37. Avoidance of Best and Most Versatile Agricultural Land (BMV land) has been a key site selection criterion for the development proposals of Great Harmeston solar farm, the first survey work conducted was Agricultural Land Classification (ALC) to identify the proportion of BMV land. Significant areas of land have been subject to ALC survey within the option area which was significantly larger than the redline. The Site selection process has undergone iterations of refinement to remove as much Grade 2 and 3a land as possible and that areas of higher grade land have been avoided in the current Site Layout Plan (**Figure 4.1**). The priority has been use of lower grade agricultural land and where BMV has been considered for this to be in areas of mixed grade.

4.26.38. The above therefore illustrates an iterative approach to design, which has been incorporated into the Proposed Development as 'embedded mitigation' or 'mitigation by design'.

4.26.39. The Proposed Development conforms to the Development Parameters that have been subject to environmental impact assessment as reported in the ES.

Alternative Technologies

4.26.40. With respect to the technology installed at solar farms, the consideration of alternatives generally relates to two operational solutions:

i. Types of solar PV panels, and

ii. Types of inverters.

4.26.41. The Applicant has considered these technology solutions in relation to the Proposed Development.

<u>Types of solar PV panels</u>

4.26.42. There are two principal types of solar PV panels available for deployment within the UK:

i. Fixed

ii. Tracking

4.26.43. Fixed solar PV panels are mounted on frames, fixed to a single height and axis, i.e., they are generally fixed to face due south.

4.26.44. Tracking solar PV panels are mounted frames which are motorised and automated to track the sun across the sky. In this way they can turn to face the sun as it rises in the east, and track it through to sunset in the west, which allows them to maximise generation across the full extent of the day and deliver better yields.

4.26.45. The key differences between fixed and tracking solar PV panels are that:

- Fixed solar PV panels are substantially cheaper to deploy and a more reliable technology.
- Fixed solar PV panels require less maintenance, and as such less traffic is likely to be generated in the operational phase.
- Tracking solar PV panels require a motor and so generate some noise, fixed solar PV panels do not;
- Fixed solar PV panels generate less electricity per panel across the day, and as such produce a reduced yield and return for developers.
- Fixed solar PV panels can have a reduced glint and glare impact compared to solar tracking solar PV panels.

4.26.46. Considering the factors set out above, the Applicant has chosen to deploy fixed solar PV panels with the Proposed Development.

Types of Inverters

4.26.47. Inverters receive direct current (DC) from the solar PV panels and convert it into alternating current (AC). This enables the electricity generated to be transferred directly to the National Grid distribution network infrastructure.

4.26.48. Inverters principally come in two different forms, which can be used on commercial solar farms. These are referred to as string inverters and centralised inverters.

4.26.49. String inverters are individual inverters that are placed at the end of a row, or rows, of solar PV panels. They are relatively small and easy to mount onto the end of solar PV panels , and each string inverter will control a particular area, in terms or rows, of the solar farm.

4.26.50. A key benefit of string inverters is that as the role of the inverter is decentralised, if one fails then only the panels that it controls within that string would be taken

out of generation. Distributing the inverters in this way also helps to distribute any impacts associated with the noise they generate, which was a key consideration for the Proposed Development, as evidenced by the fact that operational noise of the Proposed Development is below ambient levels at noise sensitive receptors.

4.26.51. Centralised inverters are similar to small shipping containers, which house a large number of inverters to which the solar PV panels connect. A much greater number of solar PV panels connect directly to a centralised inverter compared to a string inverter. The benefit of centralised inverters is that they are cheaper to install compared to string inverters.

4.26.52. The key differences between string inverters and centralised inverters are that:

- String inverters can be mounted directly to the solar PV panels and do not require foundations or footing, unlike central inverters.
- By virtue of being mounted on the solar PV panels, string inverters are less visually prominent than centralised inverters.
- String inverters are smaller than centralised inverters and so are less visually intrusive.
- String inverters are more expensive to install than centralised inverters, but generally have reduced maintenance costs due to the more straightforward technology deployed.
- String inverters generate lower noise levels and distribute any noise impacts across the Site – centralised inverters produce much greater noise in a single location.
- String inverters generally require less maintenance, and if one fails the wider solar farm can continue to generate electricity.

4.26.53. Considering the factors set out above, the Applicant has chosen to deploy string inverters with the Proposed Development.