



Penycae Solar Farm

Design and Access Statement



Project Quality Assurance Information Sheet



Project Title

Design and Access Statement

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Report Status: FINAL

Prepared For: Sirius SBC Renewables LLP

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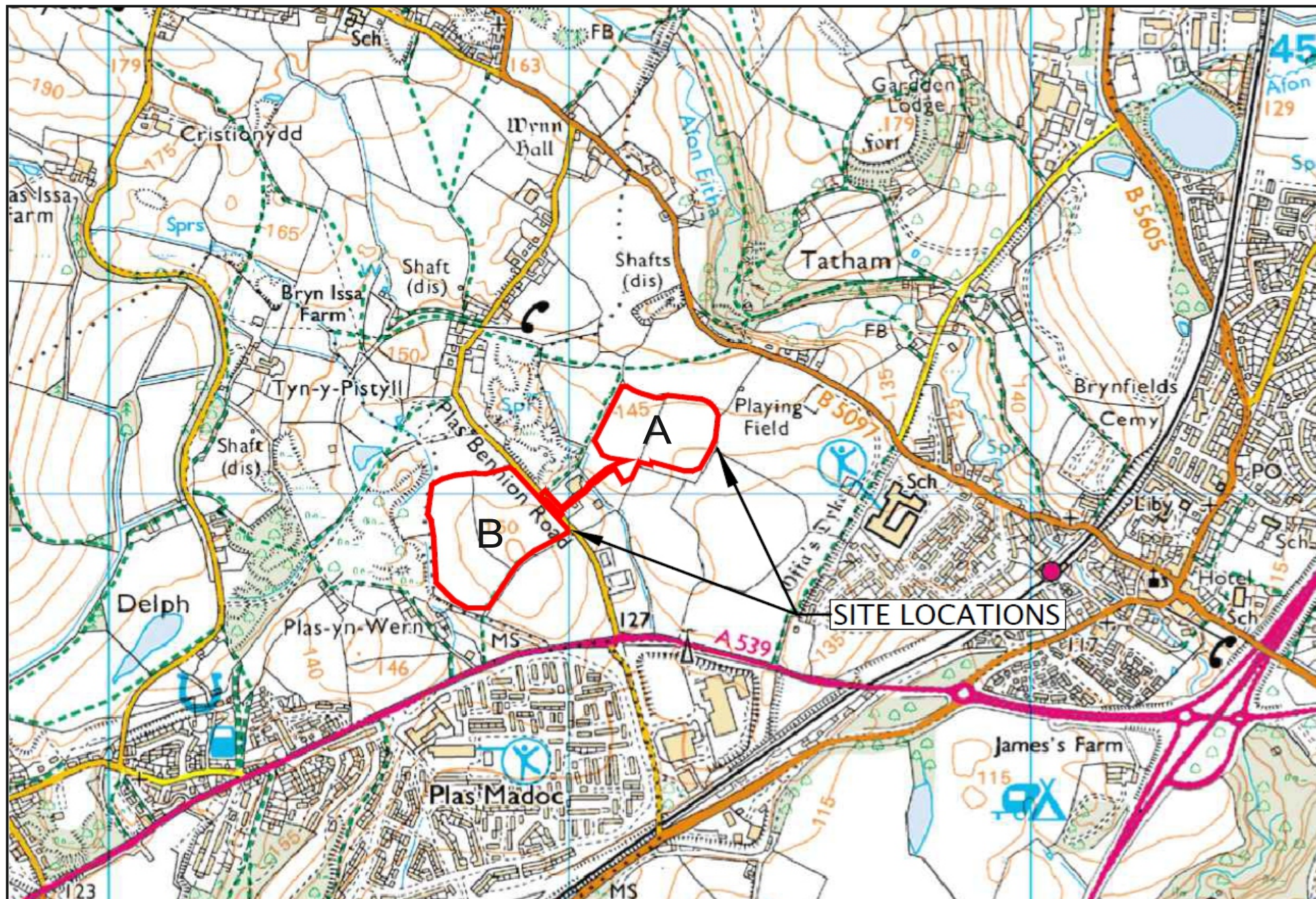
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1.0: Introduction

1.1 The Proposal

- 1.1.1 This Design and Access Statement has been produced in accordance with the Development Management Procedure Order (DMPO/2010) and the DCLG 'Guidance on Information Requirements and Validation', and with reference to the Commission for Architecture and the Built Environment (CABE) publication Design and Access Statements: How to write, read and use them (2006).
- 1.1.2 The purpose of a Design and Access Statement is to allow the applicant to demonstrate that development proposals are based on a thoughtful design process and a sustainable approach to access. The Design and Access Statement should also demonstrate how the development proposals have evolved during the design process.
- 1.1.3 This statement accompanies a planning application submitted on behalf of Sirius SBC Renewables LLP for a proposed solar (photovoltaic) farm on two parcels of agricultural land near the village of Penrycae, Wrexham. The application is also accompanied by a Supporting Statement and technical appendices. The Supporting Statement provides an appraisal of the proposed development against the Development Plan and other material considerations. The technical appendices contain the relevant environmental assessments.
- 1.1.4 The Design and Access Statement is set out in the following way:
- **Chapter 1** provides an introduction to the development.
 - **Chapter 2** describes the evolutionary process of identifying the site location and designing the development.
 - **Chapter 3** presents the design of the solar farm, in the context of the CABE guidance.
 - **Chapter 4** considers the issues associated with transportation and access.
- 1.2 The Applicant
- 1.2.1 Sirius SBC Renewables LLP is a Joint Venture between SBC Renewables Ltd and Sirius Renewable Energy Ltd (part of the Sirius Group of Companies). Sirius SBC Renewables LLP is developing an expanding portfolio of Solar PV renewable energy projects throughout the UK, specialising in developments on brownfield and previously developed land, and suitable low grade greenfield sites.



1.3 The Development & Location

- 1.3.1 It is proposed to construct a solar farm on two parcels of land (Area A and B) extending over c. 10.3ha of agricultural land located near the village of Penycae, Wrexham.
- 1.3.2 The solar farm will comprise the following elements:
- PV panels and associated supporting frames
 - Inverter and transformer stations (housed in prefabricated containers) and on-site substations;
 - Below ground cabling linking inverter and transformer stations to sub-stations;
 - Perimeter Fencing and inward facing infra-red (invisible) CCTV;
 - Internal service road;
 - Temporary set down area; and
 - Scheme of Landscaping.
- 1.3.3 The grid connection point is located to the south of the application site along Plas Bennion Road, with connection made via underground cabling.

2.0: Site Selection

2.1 Initial Feasibility

2.1.1 The careful selection of potential solar farm sites is a critical aspect of the overall solar farm development process.

2.1.2 Over the past two years, the applicant has carried out a high level assessment of some 400 sites looking for suitable locations for renewable solar energy development. An initial assessment of the feasibility of various potential sites was conducted to look at high-level constraints and key criteria for solar farm development. Following this exercise some sites were rejected due to environmental and/or technical constraints whilst others, including the proposed development at Penycae, showed potential to accommodate a solar farm. The review criteria was based, but not limited to, the following;

- Land Availability: ensuring there is sufficient land available for development;
- Solar Resource: ensuring a sufficient solar resource exists to make the proposed development financially viable;
- Electricity Distribution Network: ensuring the development is within a feasible distance of an available connection point on a suitable electricity distribution network;
- Transport Infrastructure: ensuring the development site is accessible via the public road network for the construction, operation and maintenance of the solar farm;
- Residential Amenity: ensuring the solar farm can be located sympathetically from houses to protect local amenity with respect to visual amenity and noise;

- Land Use and Context: assessing the suitability of the existing land use and avoiding any overly constraining international, national or local (planning) designations;
- Flood Risk: avoiding any areas which are susceptible to flooding; and
- Landscape and Visual Capacity: an initial assessment of the visual effects of a solar farm on important receptors and the ability of the landscape to accommodate a solar development.

2.1.3 Further information on site selection is provided in section 4.3 of the Supporting Statement which accompanies this application.

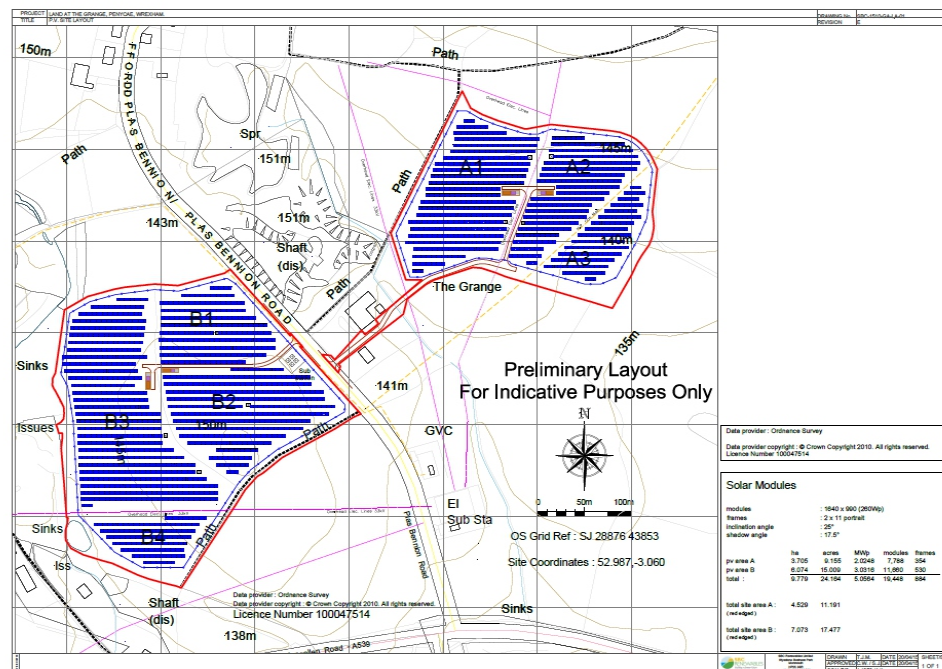
2.1.4 Based on the initial selection criteria, the areas near Penycae were identified as having significant potential to accommodate a solar PV development. As part of preparing the planning application and finalising the development layout, several detailed environmental assessments have been undertaken.

2.1.5 The assessments identified the likelihood of any significant environmental impacts resulting from the proposed facility on the receiving environment. The assessments also identified, if necessary, any mitigation to be incorporated into the design of the scheme to ensure environmental acceptability.

2.2 Community Engagement

2.2.1 Sirius SBC Renewables LLP is committed to engaging with the community to ensure they can contribute their views to the development. A public exhibition was held in the Aqua Lounge of Splash Magic Leisure Centre between the hours of 2pm and 7pm on Wednesday, 6th May 2015. A total of 34 people attended the exhibition. Further information regarding the consultation is provided within the Statement of Community Involvement which accompanies this application.

▼ Indicative layout presented at the exhibition



2.3 Public Feedback

2.3.1 In total 10 comments forms were completed at the exhibition, comments are summarised below:

- Concerns over potential visual impact and proximity to The Grange property: The southernmost row of solar arrays in Area A were removed to provide a greater offset distance from The Grange property. Furthermore the substation within Area B was moved further north to increase separation distance from The Grange. The views of the site can also be reduced following supplemented planting of trees/hedgrows at the site boundary where necessary;
- Concerns over footpath: The footpath corridor that borders the south eastern perimeter of Area B has been widened to allow an additional hedgerow to be planted beside the site security fence. This will screen views of the development from the path;
- Community Benefit: Whilst there will be no direct financial benefits to the local community proposed, the construction phase of the development is likely to generate income from local businesses. The business rates generated by the development will be retained locally; and
- Concerns over site drainage; The development will not impact on the current drainage of the site and a flood risk assessment has been carried out.

2.4 Design Iteration

- 2.3.1 Several environmental assessments have been undertaken to inform the design of the proposed development.
- 2.3.2 During the public exhibition, members of the public were asked for their suggestions on improvements to the scheme. As part of the design process, a number of factors were highlighted including enhancing biodiversity on site and improving the screening of the application site from views beyond the site boundary.
- 2.3.3 The identified improvements, constraints and suggested mitigation, including landscaping, were then mapped to inform the final design.

Phase 1 Habitat Survey

The ecological conditions of the site and the immediate vicinity has been surveyed. The proposed development will affect two areas of agricultural land which are not situated within a designated area of conservation. With the exception of the new access point, all other existing hedgerows will be retained as with all woodland, and the existing grassland will be managed. A native wildflower mix will be sown and managed across the development areas. Bat and bird boxes will be provided as will deadwood piles. Overall there will be a significant enhancement of biodiversity as part of the solar scheme

Flood Risk

The site falls within Flood Zone A. Pluvial flooding is modelled to occur along the western boundary of Area B (in the vicinity of the existing land drainage ditches and connecting ponds), and a linear strip along the northern area. Pluvial flood depths are predicted to be no greater than 30cm, with the exception of the ponds in which water depths of up to 1 metre are modelled.

Landscape & Visual Impact Assessment

The LVIA considered the potential impacts arising from the development on local landscape character and visual amenity. The assessment concluded that the proposed development would not lead to substantial adverse impacts on any identified receptor. Views of the site will be further reduced following supplemented planting of trees/hedgerows at the site boundary where necessary.

Cultural Heritage Assessment

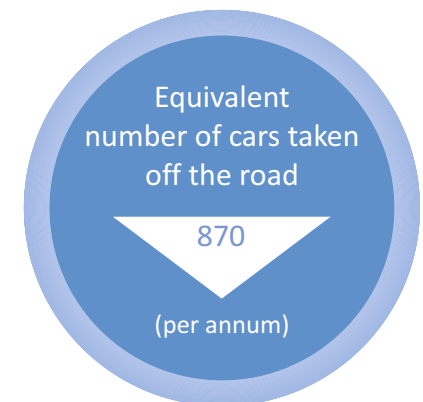
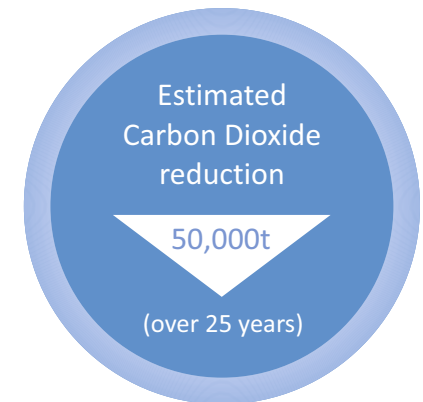
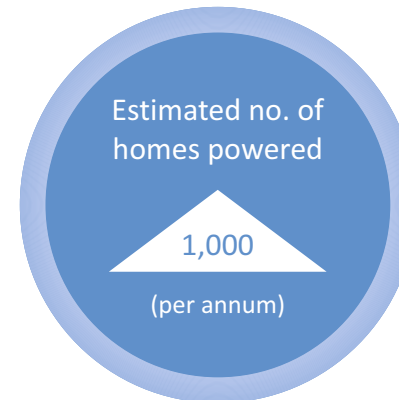
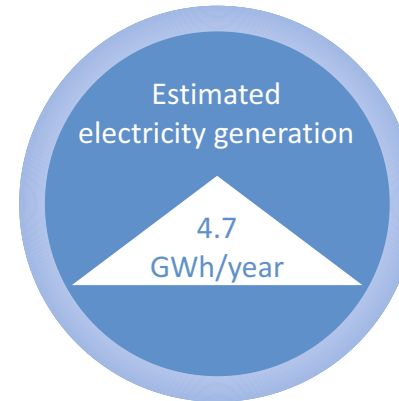
A Cultural Heritage Assessment of both direct and indirect effects has been undertaken for the proposed development. The assessment concluded that no direct effects have been identified. A number of designated monuments and buildings were identified within the surrounding area. It is not anticipated that the development would harm the heritage significance of any asset.



3.0: Final Design

3.1 Use

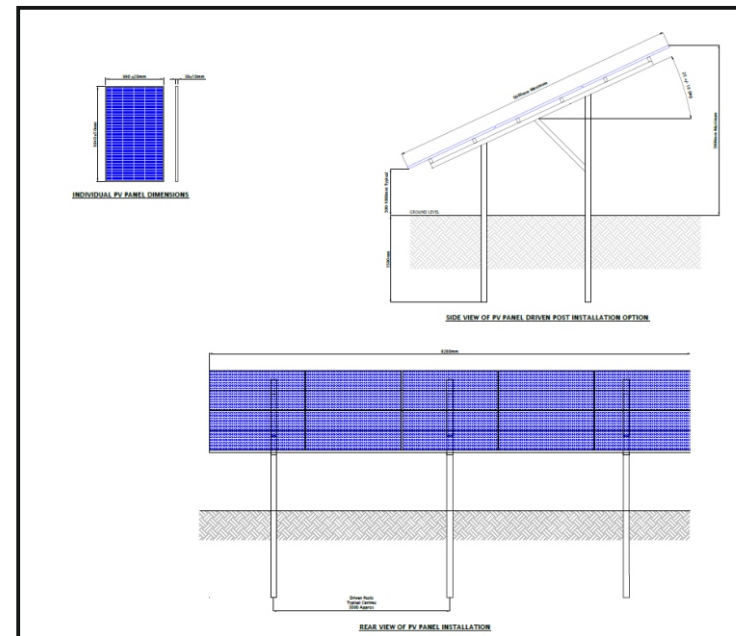
- 3.1.1 The proposal is for a solar farm that will generate low carbon renewable energy. The electricity will be exported to the Local Distribution Network providing clean energy to homes and businesses in the local area.
- 3.1.2 The importance of renewable energy generation as part of the response to climate change is recognised at a UK Governmental level and solar generation is acknowledged as the renewable energy generation technology that enjoys the highest levels of public support. Furthermore, renewable energy from solar supports the national economic objective to diversify energy supply and to lessen dependence upon the importation of fossil fuel. The Government consequently considers that the wider benefits to society and the economy (of renewable energy) are significant and must be given weight by decision makers in reaching their decisions on individual planning applications.
- 3.1.3 The proposed solar farm is expected to generate sufficient electricity to power the equivalent of approximately 1,000 homes per year. Over the lifetime of the facility, approximately 50,000 tonnes of CO₂ will have been off set, equivalent to taking approximately 870 cars off the road each year.



3.2 Amount

- 3.2.1 The application site collectively measures approximately 10.3ha and comprises agricultural land.
- 3.2.2 The proposed solar farm incorporates inverter and transformer stations which all connect to a proposed on site substation. This will link to the Local Distribution Network at an existing sub-station located to south of the site along Plas Bennion Road.
- 3.2.3 The mounting frames will be matt finished galvanised steel that will be fixed to steel posts that are screwed or driven into the ground. The inverter and transformer stations will sit on concrete bases to ensure stability. Deer fencing (c. 2m high) and inward facing infra-red (invisible) CCTV will also be installed on the site.
- 3.2.4 The panels are constructed from impermeable materials; rain water will run off directly onto the ground below. As the panels are raised off the ground, the surface below remains permeable. The amount of land that is made impermeable by the installation of the facility is limited to the concrete pads of the inverter and transformer stations.
- 3.2.5 During the construction phase, a construction compound will be required to accommodate delivery and storage of materials and equipment. This is shown on the layout plan (Drawing No. SBC1043/4/05).

- 3.2.6 Heavy goods vehicles movements associated with the construction phase of the development have been detailed in the Construction Method Statement which forms part of this application. This demonstrates that impacts from the construction phase of the development are not significant and can be accommodated by the existing road network.



Proposed PV Panel Details ▲

3.3 Scale, Landscaping and Appearance

- 3.3.1 The proposed solar farm will consist of photovoltaic panels laid out in arrays running from east to west across the site. Each array will be mounted on simple metal frame work. Each panel is approximately 1m wide and 1.6m in length, secured to a mounting frame and angled between 15 and 35 degrees to the horizontal. Panels will be no greater than 3m from the ground.
- 3.3.2 The site is characterised by farmland, as well as by existing hedgerows along the field boundaries.
- 3.3.3 A scheme of proposed landscaping and ecological management will be implemented as part of the development to improve the local area for biodiversity and ensure the successful establishment of the landscape scheme.
- 3.3.4 All existing field hedges and trees around the site will be retained and protected with appropriate off set distances. Any areas which do not have boundary vegetation and any gaps identified in the existing hedgerow will be planted with a native hedgerow/tree mix to provide further landscape structure and screening. All planting proposed for the site areas will be native and characteristic to the local landscape
- 3.3.5 In addition, a low maintenance wildflower grass mix will be sown between the hedgerow and perimeter fence which will increase the diversity of vegetation cover and the proposed density of the panels will be sufficient to promote effective grass growth.
- 3.3.6 Full details of the proposed landscaping scheme are provided within the Landscape and Visual Impact Assessment.



KEY

- APPLICATION BOUNDARY (103,040m²)
- PROPOSED SECURITY FENCE
- GAS EXISTING HIGH PRESSURE GAS MAIN
- HV/OH EXISTING OVERHEAD CABLES
- EXISTING GRASSLAND
- PROPOSED ACCESS ROADS
- PROPOSED TEMPORARY SET-DOWN AREAS
- PROPOSED PV PANELS
- PROPOSED INVERTER AND TRANSFORMER STATION
- X
 PROPOSED DNO SUBSTATION
- PROPOSED CUSTOMER SUBSTATION
- PROPOSED CONTROL ROOM
- PROPOSED METER ROOM
- X
 PROPOSED TRANSFORMER STATION

SITE LAYOUT

4.0: Access

4.1 Access to the site

- 4.1.1 For Area B, a new entrance point is proposed off Plas Bennion Road midway along the sites eastern boundary. In order to increase the visual splay for vehicles leaving the site, this access point will be constructed before construction of the solar farm. The existing lane between 'The Grange' and the neighbouring former agricultural buildings will be utilised to provide access to Area A.
- 4.1.2 During the construction phase, all HGV delivery vehicles will travel to and from the development site via the A483 and A539, from which Plas Bennion Road can be safely accessed via a central turning lane.
- 4.1.3 Construction traffic will be subject to a series of traffic management measures detailed within the Construction Traffic Method Statement.
- 4.1.4 An estimated 30 staff will be on site during the construction period, dependant on the phase of the construction schedule. During the operational phase of the site, there will be no staff based on site and there will be the requirement for routine inspections/maintenance by light goods van approximately once a month.



Existing entrance to Area A ▲

4.2 Operational Access

- 4.2.1 Access during the operational phase will be via the existing access gates. Track are proposed within the solar farm itself to allow access to service the solar panels. The tracks will be 4.5m wide and will be finished with compacted stone, allowing the appearance of the tracks to mellow and blend in with the landscape over time.
- 4.2.2 The proposed development will be a specialised facility and will have restricted public access. In designing the proposed development, emphasis has been placed on security. The design ensures the site is secure and not readily accessible to the public through the installation of appropriate security fencing, barriers and infra-red CCTV. Access will be through invitation only.
- 4.2.3 Whilst access will be restricted into the solar farm, the existing permissive footpaths within the vicinity of both areas will not restrict users movements.



View south towards proposed access point to Area B ▲

Example Solar Farm at Hendra Holiday Park

▼ The panels on the Hendra Holiday Park Solar Farm site in Cornwall are arranged to allow continued grazing on the site.





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