

# DESIGN AND ACCESS STATEMENT: OAKLANDS SOLAR FARM AND BATTERY ENERGY STORAGE SYSTEM

LAND OFF FIVE MILE LANE | NEAR BONVILSTON | VALE OF GLAMORGAN



**Design and Access Statement:  
Oaklands Solar Farm and BESS**

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**PREPARED BY**



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# 1. INTRODUCTION



## 1.1 FOREWARD

- 1.1.1 Climate change is generally considered to be the greatest existential threat to the environment, our way of living and humanity in general. Addressing this huge challenge requires a sea change in how we live our lives in the future and the decisions we make.
- 1.1.2 In order to address this challenge, the UK Government set a target to decarbonise the power grid and ensure all cars are zero emissions capable by 2035 thus moving away from fossil fuels and replacing this capacity with renewable energy.
- 1.1.3 In addition to this, recent months have brought into stark focus the need for the UK to improve its energy security to ensure both continuity of supply, reduce costs to the consumer and avoid future price spikes caused by geopolitical events. In response to this additional challenge, the UK Government has published The British Energy Security Strategy which commits to developing a low-cost zero consistent electricity system, supported by large scale long duration electricity storage. This transition is predicted to result in an increase in electricity demand by 40-60% all of which must be met from renewable energy sources.

## 1.2 INTRODUCTION

- 1.2.1 This Design and Access Statement accompanies a planning

application submitted on behalf of Sirius Renewable Energy (SRE) for the construction and operation of a c.50MW (export capacity) solar farm and 50MVA Battery Energy Storage System (BESS) and associated infrastructure over three parcels of land (“Development Areas”) located c. 750m to the south of the village Bonvilston, Vale of Glamorgan.

- 1.2.2 The Vale of Glamorgan Local Development Plan allocates the majority of the development areas to the west of Five Mile Lane as a ‘Search Area for Solar Energy’.
- 1.2.3 The solar farm will generate enough electricity to power over 20,400 homes per year and offset approximately 20,200 tonnes of CO<sub>2</sub> every year, the equivalent of taking over 5,000 cars off the road<sup>1</sup>.
- 1.2.4 The BESS will deliver significant environmental benefits, enabling technology for renewable generation, replacing the required for gas fired power generation and providing rapid response power to satisfy peak demand. In performing these roles the development has the ability to reduce carbon dioxide emissions by over 20,600 metric tonnes annually whilst also providing electricity storage equivalent to supplying over 20,800 homes<sup>2</sup>.
- 1.2.5 The purpose of this Design and Access Statement (DAS) is to allow the applicant to demonstrate that development

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<sup>1</sup> Internal calculations using Ofgem Typical Domestic Consumption Values and BEIS Carbon Conversion Factors

<sup>2</sup> Internal calculations using Ofgem Typical Domestic Consumption Values and BEIS Carbon Conversion Factors

proposals are based on a thoughtful design process and a sustainable approach to access. The DAS should also demonstrate how the development proposals have evolved during the design process.

- 1.2.6 This statement sets out the design and access principles for the proposed development in accordance with s14 of The Developments of National Significance (Procedure) (Wales) Order 2016 which sets out the requirements for Design and Access Statements. Consideration has also been given to the objectives of good design as set out in Planning Policy Wales (PPW) and Technical Advice Note 12: Design (TAN 12).
- 1.2.7 The application is also supported by a Planning Statement and Environmental Statement (including technical appendices and Non-Technical Summary). The Planning Statement provides an appraisal of the proposed development against the Development Plan and other material considerations.
- 1.2.8 This Design and Access Statement has the following structure:
- **Chapter 1** provides an introduction to the development;
  - **Chapter 2** describes the high-level design process;
  - **Chapter 3** considers the design of the scheme; and
  - **Chapter 4** considers the access arrangements to the site
  - **Chapter 5** provides a summary and conclusion.

### 1.3 OUTLINE DESCRIPTION OF THE SITE AND SURROUNDINGS

- 1.3.1 The proposal site comprises three parcels of farmland, bisected by Five Mile Lane, as shown on Drawing No. **SRE1113/02/02** (Doc Ref. 2.02) and **Figure 1.1** below. For ease of reference, the proposal site is divided into three areas as per **Figure 1.1** below and measures:
- Development Area 1 (Pancross) - 66ha
  - Development Area 2 (Redlands) - 40ha
  - Development Area 3 (Oaklands) - 21ha
- 1.3.2 The proposal is located c. 750m to the south of the village of Bonvilston, c. 950m to the south-west of the village of St Nicholas with the city of Cardiff lying some c.12km to the east.
- 1.3.3 The site and surrounding areas are rural in nature, characterised by farmland, scrubland, established hedgerows and woodland blocks. The majority of the site is relatively flat with the exception of the north-western area which falls away to the north.
- 1.3.4 Along the western boundary of the site is an unnamed lane. Several farms are located close to the boundary site. Approximately 400m to the south is a 6MWp solar farm that has been operational since 2018 (Planning Ref. 2014/00798/FUL).

## 1.4 DESIGNATIONS

- 1.4.1 The Vale of Glamorgan Local Development Plan allocates the majority of the site to the west of Five Mile Lane as a 'Search Area for Solar Energy'. The whole site is located within a Special Landscape Area and mineral safeguarding area. Approximately 19ha of the western extent of the proposal site lies within a Registered Historic Landscape.
- 1.4.2 The entirety of the site is located in Flood Zone A (lowest risk of flooding) where all types of development are deemed to be appropriate from a flood risk perspective.
- 1.4.3 Several farms are located adjacent to the site boundaries to the north and to the south of the proposal site. To the east of the A4226, and approximately 500m to the south of the site is a 6MWp solar farm that has been operational since 2018 (Planning Ref. 2014/00798/FUL).
- 1.4.4 Adjacent to the southern boundary of the proposal site to the west is Nant Whitton Woodlands which is a Site of Special Scientific Interest (SSSI) and Sites of Importance for Nature Conservation (SINC). A SINC is identified adjacent to the west and north-east of the proposal site.
- 1.4.5 The nearest Listed Building is the Grade II listed Ty Mawr (Great House) located approximately 850m to the north of the site and a Scheduled Ancient Monument (Ty'n-y-Coed Castle Ringwork) is adjacent to the site's northern boundary. The westmost area of the site lies within a historic landscape.
- 1.4.6 From the Vale of Glamorgan County Borough Council

Definitive Map, there are no public rights of way within or along the boundaries of the site.

- 1.4.7 A utilities search identified a high-pressure gas pipeline ran north to south within the western part of development area 2. Following discussions with the undertaker, Wales and West Utilities, the deployment of solar panels were therefore removed from the field in which the pipeline runs.
- 1.4.8 There is a 132kV overhead power line that run across the site, parallel to the northern boundary in an east to west alignment with six existing electricity pylon towers located within the application boundary. In addition, there is a 33kV overhead power line running south-east to north-west and a 11kV overhead power line running south-east to north-east within DA1. Buffers were created between the deployment area and the power lines where applicable.

Figure 1.1: Site Location





**Figure 2.2: View of the land to the east of Five Mile Lane and overhead powerlines**



**Figure 2.3: Photograph of grazing sheep within the area to the east of Five Mill Lane**



## 1.5 THE PROPOSAL

1.5.1 Sirius Renewable Energy are seeking planning permission to construct and operate a solar photovoltaic (PV) farm and Battery Energy Storage System (BESS) on approximately 127ha of farmland to the south of the village Bonvilston and south-west of the village of St Nicholas. It is anticipated that the proposed solar farm will have an export capacity of circa 50MW of electricity and the BESS will have a capacity to charge, store and export up to 50MVA of electricity to the local distribution network.

1.5.2 The proposal will comprise the following:

- Photovoltaic (PV) panels to a maximum height of circa 3m;
- Mounting frames - matt finished small section metal structure;
- BESS compound; containing c. 20 battery storage units set in bays of two surrounded by 3m high concrete firewalls, associated infrastructure, car parking and surrounded by c. 4m high acoustic fence.
- Scheme of landscaping and biodiversity enhancement;
- Central Inverters (inverters and transformers will be housed together in prefabricated containers to a maximum height of circa 3m), substations (DNO and Customer to a maximum height of circa 3m) and associated cabling (below ground);

- Point of connection;
- Stock fencing up to a height of circa 2m to secure the development areas;
- Infra-red CCTV (CCTV cameras would operate using motion sensors and would be positioned inward only to ensure privacy to neighbouring land and property);
- Temporary set down areas;
- Internal service roads; and
- Site access for the construction, operational and decommissioning phases.

1.5.3 The point of connection to the local distribution network is an existing pylon tower which carries an overhead 132kV cable located within Development Area 1 immediately north of the proposed BESS compound. A customer substation is to be located within the BESS compound and from here a cable will connect directly into the existing onsite pylon. Development Area 2 and Development Area 3 will be connected to the main customer substation at Development Area 1 by underground cabling which will be located within the adopted highway or within land where agreement are in place with the respective landowners.

1.5.4 The scheme will be operational for 40 years after which all equipment can be removed from site.

## 1.6 DEVELOPMENT OF NATIONAL SIGNIFICANCE

1.6.1 As the scheme comprises an electricity generating station with a potential generating capacity of between 10MW and 350MW, it falls within the definition of a 'Development of National Significance' (DNS) under section 4 of the Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016<sup>3</sup>, for the purposes of section 62(D) of the Town & Country Planning Act 1990 (the "TCPA"), as amended by s19 of the Planning (Wales) Act 2015 ("the Planning Wales Act").

1.6.2 The purpose of the DNS process is to ensure timely decisions are made on those planning applications that are of the greatest significance to Wales because of their potential benefits and impacts.



<sup>3</sup> 2016 No. 53 (W.23)



## 2. DESIGN PROCESS

## 2.1 DESIGN PROCESS

2.1.1 The application site was selected through an extensive search criteria exercise undertaken by the Applicant. South Wales represents a particularly favourable area for solar deployment because of the high levels of solar irradiation.

2.1.2 A range of technical, environmental and economic factors are considered when assessing a site for ground-mounted solar PV development. Key factors for consideration include:

- Solar irradiation levels;
- Availability and proximity of the local distribution network (grid connection);
- Proximity to local population;
- Topography;
- Field size and shape;
- Potential for overshadowing;
- Development Plan Policy;
- Access to the site for construction/decommissioning traffic;
- Agricultural land quality;
- Landscape sensitivity and visual impact amenity;
- Nature conservation and potential for enhancement;
- Flood risk; and
- Land availability.

2.1.3 Based on the high-level selection criteria mentioned above, the proposal site was considered suitable to accommodate a solar farm. As detailed environmental survey and assessment work was undertaken and discussions with local stakeholders progressed, the design of the proposed development evolved.

2.1.4 The key constraints and opportunities are summarised below:

- Landscape and Visual Impact;
- Ecology; and
- Heritage.

### Landscape and Visual Impact

2.1.5 The Vale of Glamorgan Local Development Plan allocates a large section of Development Areas 1 and 2 to the west of Five Mill Lane as 'Search Area for Solar Energy'.

2.1.6 As is the case with the wider Vale of Glamorgan rural areas, the whole site is located within two Special Landscape Areas (SLA) separated by the A4226:

- SLA 4 – Nant Llancarfen (west of the A4226)
- SLA 6 – Drffryn Basin and Ridge Slopes (east of the A4226).

2.1.7 In addition, approximately 19ha of the western extent of Development Area 1 lies within a Registered Historic Landscape Area (HLA) of Llancarfan.

2.1.8 The layout of the arrays within the site area has been designed so that the existing mature hedgerows, tree cover



and scrub around and within the site boundaries can be retained.

2.1.9 The Landscape and Visual Impact Assessment advised the following landscape mitigation and enhancement proposals to improve visual containment and avoid / minimise any potential visual impacts which have been incorporated into the design:

- Reinforce existing hedgerows to improve visual containment of the solar deployment areas. Where appropriate on the boundary adjoining receptors (residential, roads and footpaths) the hedge will be allowed to grow up to at least c.3m tall to help to screen visibility from publicly accessible areas to the solar farm;
- Reinstatement of some lost historic hedgerows within Development Area 1 to improve landscape structure and restore the historic field structure;
- Additional standard sized hedge trees to be planted along the new hedgerow within the western area of Development Area 1, within the Llancarfen Historic Landscape Area at random spacings to increase local tree coverage, filter visibility from sensitive receptors and provide green links between existing woodland areas; and
- Maintain a minimum offset distance of at least 50m from all residential receptors that will remain clear of all development.

## Ecology

2.1.10 Adjacent to the southern boundary of the proposal site to the west of the A4226 is Nant Whitton Woodlands, which is a Site of Special Scientific Interest (SSSI) and Sites of Importance for Nature Conservation (SINC). A SINC is identified adjacent to the west and north-east of the proposal site. The Outline Construction Environmental Management Plan (CEMP) details mitigation measures to be put in place in order to avoid and minimise any potential impact during the construction of the proposal on these designated sites.

2.1.11 After thorough baseline survey work and discussions with Vale of Glamorgan Council's Ecologist, the assessment work demonstrates that PV panel deployment and management would realise a significant benefit habitat value across the site.

2.1.12 Appropriate buffers are integrated from existing and proposed vegetation (typically a minimum of 4m from vegetation to the site boundary fence and a further 4m from the fence to the solar arrays) with development restricted from within the canopy of trees, particularly notable in Development Area 2.

2.1.13 A number of enhancements have been proposed following baseline survey work including;

- Grassland within the solar deployment zones will be managed to create a diverse sward between and around the solar arrays of tussock grassland.
- Buffer zones around the site periphery outside of the solar deployment zones will be sown with locally



the ground and disturbing potential archaeology.

## 2.2 COMMUNITY ENGAGEMENT

2.2.1 The Applicant is committed to engaging with the local community to give residents and other interested parties the opportunity to find out more about the development and express their views. A full account of the consultation process will be presented in the Consultation Report submitted with this application.

2.2.2 Local residents and St Nicholas with Bonvilston Community Council were contacted at the early stage of the project to introduce the scheme. The Applicant has since held a virtual meeting and site visit with said members of the Community Council.

2.2.3 In addition to the above, a dedicated project website has been created that provides up to date details on the proposal and advises of forthcoming consultation events. The website address is:

[Home \(oaklands-solar.co.uk\)](http://oaklands-solar.co.uk)

2.2.4 There is also a statutory requirement for a 6-week period of pre-application consultation in advance of the planning application being submitted to PEDW for acceptance and examination. Within this period, a public exhibition will be held at Bonvilston Reading Room providing details of the proposals along with the opportunity to speak to the project team.



### 3. DESIGN CRITERIA

### 3.1 GENERAL CONSIDERATIONS

- 3.1.1 The importance of renewable energy generation as part of the response to climate change is recognised at all levels of governance in Wales. Furthermore, renewable energy from solar supports the national economic objective to decentralise energy supply and to lessen dependence on fossil fuels. The Welsh Government consequently considers that the wider benefits of renewable energy schemes to society and the economy are significant and must be given significant weight by decision makers in reaching their decisions on individual planning applications.
- 3.1.2 At a local level, the Vale of Glamorgan Council declared a climate emergency in July 2019 with an aim to reduce the Council's carbon emissions to net zero by 2030.
- 3.1.3 The proposed solar farm has been carefully designed to ensure visibility from outside the application site is reduced as far as possible. The renewable energy will be exported to the Local Distribution Network providing energy to homes and business in the locality.
- 3.1.4 A typical site arrangement will include ground mounted PV panels aligned east to west, facing south, similar to that as shown in **Figure 3.2** below. There will also be transformers, substations (DNO and customer) and control cabins. The site will be secured by deer fencing and CCTV.
- 3.1.5 The customer and DNO substation will be located at the Point of Connection within the BESS compound within Development Area 1 near to the site access off five Mile Lane. From here a cable will connect directly into the

existing onsite pylon. Development Areas 2 and 3 will be connected to the main customer substation at Development Area 1 by underground cabling which will be located within the adopted highway or within land where a lease agreement is in place with the landowner.

**Figure 3.1: Image of ground mounted PV panels**





Figure 3.2: Ground mounted PV panels and transformer



### 3.2 AMOUNT

- 3.2.1 The extent of deployment is determined largely by the available capacity on the grid network, and the acceptability of environmental effects when weighed against the benefits of the proposal and the contribution it will make in reducing carbon emissions. Whilst an indicative site arrangement is provided in Drawing No. **SRE1113/02/03** (Doc Ref. 2.03), a detailed layout and phasing of construction will be agreed with the Local Planning Authority (LPA) by way of an appropriately worded planning condition following grant of planning permission.
- 3.2.2 There will be two types of mounting frames for the PV panels used on site. Subject to ground conditions, pile foundations to support the mounting frames that carry the panels will be used. The piles are typically pushed into the ground to a

depth of 1.5m. Where there is the potential presence of archaeological findings on some parts of the site, the frames will be mounted on ballast blocks to ensure stability of the panels and frames without penetrating the ground and causing potential disturbance.

- 3.2.3 Perimeter deer fencing (c. 2m high) and CCTV (using invisible infra-red lighting) will also be installed around the Development Areas.
- 3.2.4 The BESS compound will comprise of c. 20 battery container units with each battery container accommodating 2.5MW of capacity. The batteries will sit in bays of two surrounded by 3m high concrete firewalls. The BESS compound also comprises two switchgear cabins, two spare storage cabins and four containers.
- 3.2.5 The BESS compound will be surrounded by a c.4m acoustic fence.
- 3.2.6 The solar panels are constructed from impermeable materials; rainwater 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 inverters and the BESS and Substation compound. The solar deployment land on the site can continue to be used for agricultural purposes (sheep grazing or similar) and for biodiversity enhancement.
- 3.2.7 During the construction phase temporary roads and set down areas will be required. The set down areas will accommodate deliveries of materials and equipment during

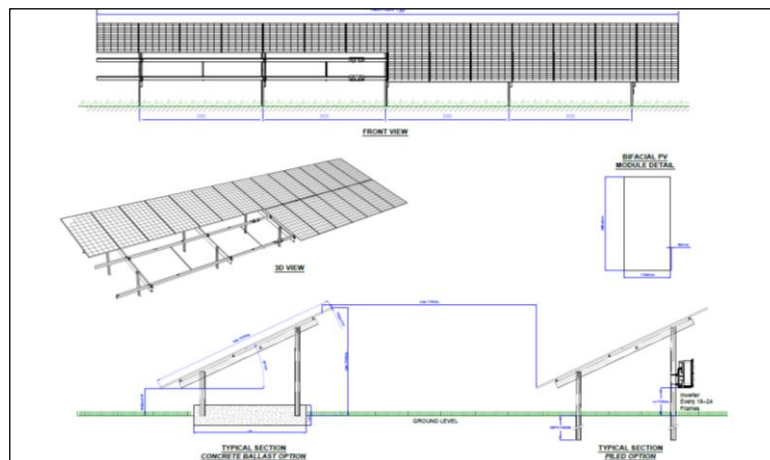
construction. To minimise the number of vehicle movements crossing the A4226 between plots, temporary set down areas will be provided both sides of the A4226. Drawing No. **SRE1113/02/24** (Doc Ref. 2.24) identifies the locations of the temporary set down areas.

- 3.2.8 The proposal will have an operational lifespan of 40 years, after which equipment can be removed from the site and the land can continue to be used for agriculture.

### 3.3 SCALE

- 3.3.1 The proposed solar farm will consist of photovoltaic panels laid out in arrays running from east to west, facing south across the site and will be angled between 10° and 30° to the horizontal and orientated in a southerly direction.

**Figure 3.1: Illustrative Panel and Frames Specification**



- 3.3.2 All panels will be mounted on frames with a maximum height of 3m above ground level; the lowest part of the panel will

measure approximately 0.9m above ground level.

- 3.3.3 The rows of panels will be set to 3.2m to avoid shadowing and allow for scheduled maintenance.
- 3.3.4 Transformers and control cabins are typically 3m in height and are designed to be as small as possible.
- 3.3.5 The largest structures on site will be the battery container units which have a similar appearance to shipping containers and measure typically 18.6m in length (including the air cooling and heating units at either end), 2.44m wide and 3.1m in height.

### 3.4 APPEARANCE

- 3.4.1 Whilst the proposal site area will total approximately 127ha, the solar panels deployment areas will total 103ha. Furthermore, within the deployment areas the ground cover ratio of the panels is between 40 to 60%. Significant standoff areas are also included from field boundaries. The standoffs will be dependent on local topography and other environmental requirements, including ecology and operational access.
- 3.4.2 The layout of the solar farm and BESS compound has been designed to fit within the context of the development areas and all existing trees and hedgerows will be retained and where necessary, managed.
- 3.4.3 Photomontages have been prepared to show how the proposal appears in the landscape once constructed when viewed from selected positions. The photomontages are presented in **Appendix 7.3** (Doc Ref. 4.01.7c).

3.4.4 The Landscape and Visual Impact Assessment (Chapter 7 of the accompanying Environmental Statement) considers the potential visual impacts of the proposal. As part of the assessment, a scheme of biodiversity enhancement is proposed which has been designed to reduce any adverse visual effect and strengthen landscape character. As the scheme of biodiversity management matures over time, any visual effect will continue to be minimised.

### 3.5 LANDSCAPING AND BIODIVERSITY MANAGEMENT

3.5.1 A key aspect of the proposal is to provide biodiversity enhancements across the site. This and the need for existing planting to reduce potential impacts to visual amenity has been informed by the ecological survey works and the Landscape Visual Impact Assessment.

3.5.2 The proposed Landscape Masterplan for the application site can be viewed on Drawing No. **SRE1113/02/18** (Doc Ref. 2.18). The drawing identifies the existing habitats to be retained and how they will be managed. In addition to land between and beneath the panels, there will be some areas of non-deployment land that will be brought under formal management to provide landscape and ecological enhancement for the life of the scheme.

3.5.3 The Landscape and Visual Impact Assessment and ecological assessment (Chapter 7 and 11 of the accompanying ES) provides full details of the enhancement proposal, but in summary these include:

- Management of grassland within the solar deployment

zones to create a diverse sward between and around the solar arrays, of tussock grassland;

- Management of grassland margins outside of the solar deployment zones for biodiversity, the grassland fringes (low maintenance perennial meadow mix) will provide enhanced habitat fringes and contribute to increasing biodiversity levels in the local area;
- Reinforce existing hedgerows to improve visual containment of solar deployment areas (gapping up and growth to a greater height) Where appropriate on the boundary adjoining receptors (residential, roads and footpaths) the hedge will be allowed to grow up to at least c.3m tall to help to screen visibility from publicly accessible areas to the solar farm;
- Improve landscape structure of Development Area 1 (Pancross Farm) with the reinstatement of some lost historic hedgerows to restore the historic field structure, for both landscape / visual and ecological benefits;
- Additional standard sized hedge trees to be planted along the new hedgerows within the western area of Development Area 1, the Llancarfen Historic Landscape Area at random spacings. The planting will increase local tree coverage, filter visibility from sensitive receptors and provide green links between existing woodland areas.

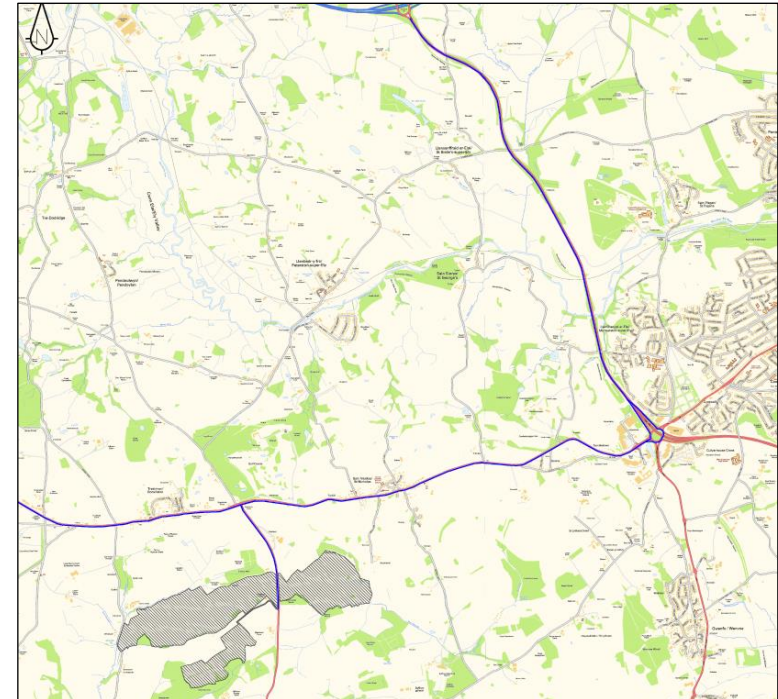




## 4. ACCESS

- 4.1.1 Access to the Development Areas is from the A4226 Five Mile Lane which is an adopted highway which runs north to south, dividing the site approximately in half. Traffic will approach the site from either the east via the M4 motorway at Junction 33 and turn onto the A4232 which runs south-east to the western extent of Cardiff. Vehicles will then join the A48 at a roundabout junction. The A48 runs west in the direction of Bonvilston, however, prior to reaching the village, the A4226 can be joined at a signalised junction. Or approach the site from the west via the A48 turning onto the A4226. A vehicle routing plan is provided within the Construction Traffic Method Statement (CTMS), presented in **Appendix 12.2**, (Doc Ref. 4.01.12b) and **Figure 4.1** below.
- 4.1.2 Five Mile Lane is a single-track, two-way road and is subject to the National Speed Limit within the vicinity of the site access. The topography of Five Mile Lane in both directions of the site access is predominantly flat, whilst the alignment of the road has a slight bend towards the north.
- 4.1.3 The existing field accesses that will be used to access the development areas are to be improved as detailed within the Transport Statement to facilitate the required vehicles.

**Figure 4.1: Vehicle Routing Plan**

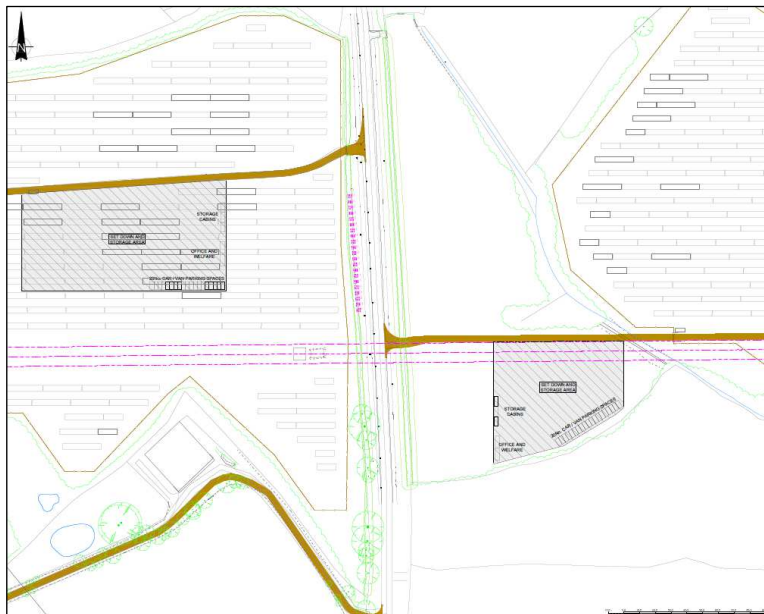


- 4.1.4 A series of vehicle swept-path analyses are shown within the CTMS, presented within **Appendix 12.2**, (Doc Ref. 4.01.12b) which demonstrate that a 16.5m articulated vehicle and 10m rigid vehicle are able to access the setting down areas, manoeuvre and leave the site in forward gear, whilst not needing to cross into an opposing traffic lane. Smaller vehicles will be used to move materials within the development areas. In addition, a temporary access is to be provided to prevent the need for vehicles to utilise the A4226

when moving between the set down area in development area 1 and 3.

- 4.1.5 The temporary set down areas will be constructed from compacted crushed stone and will temporarily accommodate site equipment, materials and modular accommodation, see **Figure 4.2** and Drawing No. **SRE1113/02/24** (Doc Ref. 2.24) for details. This will allow safe receipt and storage of materials. Internal service roads will be constructed to allow vehicular access within the site where required, details of which are provided on Drawing No. **SRE1113/02/17** (Doc Ref. 2.17).

**Figure 4.2: Details of the Temporary Set Down Area**



- 4.1.6 The construction phase of the proposal would result in the

temporary generation of construction and staff related traffic over a 6-month construction period. During this time, there will be journeys associated with the arrival and departure of site staff and the delivery of equipment and construction materials.

- 4.1.7 During this construction period, there will be approximately 740 HGV deliveries or 1,480 two-way movements (in and out). These movements will be split between the two temporary set down areas.
- 4.1.8 The first month will see the highest deliveries to site at 225 which is the equivalent of a maximum 1 movement every hour. An appropriate highway safety signage strategy will be prepared as part of the detailed CTMS, to be dealt with by a suitably worded planning condition, which will mitigate the risks associated with the HGV movements on the surrounding highway network.
- 4.1.9 The accompanying CTMS, presented **Appendix 12.2**, (Doc Ref. 4.01.12b) sets out the details on the proposed measures to manage construction vehicle movements.
- 4.1.10 During the construction period up, to 80 staff will be on-site depending on the phase of the development. Staff will arrive and depart the Development Areas in transit vans with a 'crew cab', with an expected minimum capacity of 6 persons. Given this, there would be approximately 14 vehicles arriving to the Development Areas in a morning and 14 departing in an evening.
- 4.1.11 All vehicle parking will be provided within the two temporary set down areas within the development site. There will

therefore be no parking on the local highway network.

- 4.1.12 After commissioning, the site will only be visited during routine maintenance checks. The access during the operational phase will be as per the construction routes. Service tracks are required to the BESS compound as well as around and within the solar farm panel deployment areas which will provide vehicular access around the sites as part of regular inspections and maintenance.
- 4.1.13 The decommissioning phase is expected to generate similar levels of traffic as the construction phase.
- 4.1.14 The proposed development will have restricted public access. In designing the proposed development, emphasis will be placed on security. The design ensures the site is secure and not readily accessible to the public through the installation of deer and security fencing and infra-red CCTV. Access to the proposed facility will be through invitation only.



## 5. SUMMARY

## 5.1 SUMMARY AND CONCLUSION

- 5.1.1 This Design and Access Statement (DAS) accompanies a planning application for a solar farm and Battery Energy Storage System over three parcels of land (“Development Areas”) located c. 750m to the south of the village Bonvilston, Vale of Glamorgan on behalf of Sirius Renewable Energy Limited.
- 5.1.2 The Vale of Glamorgan Local Development Plan allocates the majority of the site to the west of Five Mile Lane as ‘Search Area for Solar Energy’.
- 5.1.3 The Environmental Statement and accompanying technical appendices assess the potential impacts of the proposal on the receiving environment. The assessments conclude that due to the largely well-screened nature of the deployment area and the limited (vertical) profile of the proposals above existing ground levels, the visual effects will be minimised.
- 5.1.4 The solar farm will generate enough electricity to power over 20,400 homes per year and offset approximately 20,200 tonnes of CO<sub>2</sub> every year, the equivalent of taking over 5,000 cars off the road<sup>4</sup>.
- 5.1.5 The BESS will deliver significant environmental benefits, enabling technology for renewable generation, replacing the required for gas fired power generation and providing rapid response power to satisfy peak demand. In performing

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<sup>4</sup> Internal calculations using OFGEM Typical Domestic Consumption Values and BEIS Carbon Conversion Factors

these roles the development has the ability to reduce carbon dioxide emissions by over 20,600 metric tonnes annually whilst also providing electricity storage equivalent to supplying over 20,800 homes<sup>5</sup>.

- 5.1.6 Alongside generating sufficient renewable energy, the proposal will provide an improvement to the local landscape and significant opportunities for biodiversity. This will be achieved principally through:
- Management of grassland within the solar deployment zones to create a diverse sward between and around the solar arrays, of tussock grassland;
  - Management of grassland margins outside of the solar deployment zones for biodiversity, the grassland fringes (low maintenance perennial meadow mix) will provide enhanced habitat fringes and contribute to increasing biodiversity levels in the local area;
  - Reinforce existing hedgerows to improve visual containment of solar deployment areas;
  - Improve landscape structure of Development Area 1 (Pancross Farm) with the reinstatement of some lost historic hedgerows to restore the historic field structure, for both landscape / visual and ecological benefits;
  - Additional standard sized hedge trees to be planted

<sup>5</sup> Internal calculations using OFGEM Typical Domestic Consumption Values and BEIS Carbon Conversion Factors

along the new hedgerows within the western area of Development Area 1, the Llancarfen Historic Landscape Area at random spacings. The planting will increase local tree coverage, filter visibility from sensitive receptors and provide green links between existing woodland areas.

- 5.1.7 This DAS discusses the findings of the assessments undertaken to inform the design of the proposal in parallel with an inclusive scheme of community engagement.
- 5.1.8 It is considered that this DAS illustrates how the development proposals have been subject to a thoughtful design process by a range of professionals, demonstrating a sustainable approach to accessibility and design of the solar farm and BESS. Accordingly, the proposals are considered to be in line with Future Wales and planning permission should be granted accordingly.

