Plas Power Solar and Energy Storage Project

3.0.12 Design and Access Statement



June 2024
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Design and Access Statement

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On behalf of



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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
1	June 2024	Design and Access Statement	OC	VR	VR

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1 Introduction

1.1.1 This Design and Access Statement (DAS) has been prepared by Stantec on behalf of Lightsource SPV 192 Limited ('Lightsource bp' or 'the Applicant') to accompany a full planning application under the Development of National Significance (DNS) process for the construction and operation of a solar photovoltaic electricity generating system ('solar farm'), a Battery Energy Storage System ('BESS') and associated ancillary development ('the Proposed Development').

1.2 DAS Requirements

1.2.1 Article 14 of The Developments of National Significance (Procedure) (Wales) Order 2016 (as amended) sets out that, as a minimum, the DAS must explain: (a) the design principles and concepts that have been applied to the development; (b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account, (c) explain the policy or approach adopted as to access, and how policies relating to access in the development plan have been taken into account; and (d) how specific issues which might affect to access to the development have been addressed. This is supplemented by the Design and Access Statements in Wales (July 2017) national guidance document.

1.2.2 Section 5 of the guidance sets out a recommended structure for DAS submissions as follows:

- Summary of the proposal
- The brief and vision
- Site and context analysis
- Interpretation
- Design development
- The proposal:
    - Character
    - Access
    - Movement
    - Environmental Sustainability
    - Community Safety
    - Response to planning policy

1.2.3 This section of the report responds to each relevant criterion accordingly. It also sets out the design process and evolution of the scheme throughout the early engagement up to formal pre-application consultation (PAC), describing how the Applicant has responded to the constraints and opportunities of the Site, and taken account of comments from statutory and non-statutory consultees thus far, implementing changes to address them wherever practicable.

1.3 Summary of the proposal

1.3.1 This application proposes development which is, in summary, described as:

> *"The construction and operation and maintenance of a solar photovoltaic electricity generating station, a Battery Energy Storage System ("BESS"), inverters, transformers, cabling, substations, access tracks, landscaping, ecological enhancement areas and associated ancillary development"*

2 Site and context analysis

2.1.1 The Site covers an area of approximately 136 hectares (ha) and is located approximately 2.5km to the west of Wrexham city centre, immediately west of the A483.

2.1.2 The Site comprises two areas north and south of the A525 Ruthin Road. The southern and larger part of the Site is bound by the A525 Ruthin Road to the north, to the east by the A483, to the south by Plas Power Woods and its western-most point by agricultural fields beyond which lies Rhos Berse Road and Nant Road. Bersham and Rhostyllen are to the south east of the Site, to the east of the A483.

2.1.3 The northern parcel is bound by the A525 Ruthin Road to the south and extends northwards towards the Higher Berse Road. Coedpoeth lies approximately 120m to the west and New Broughton lies approximately 600m to the north-west of the Site.

2.1.4 The Site comprises several agricultural fields, primarily used for pasture grazing to the south and for arable use to the north, bound by a mixture of mature woodland, trees, hedgerows, fencing and agricultural tracks and roads.

2.1.5 The Site includes a small section of land to the east, adjacent to the A483, which was historically included in plans for a road improvement scheme at Junction 4 of the A483 (as part of the Junctions 3 – 6 improvements). However, in February 2023, the Welsh Government's Roads Review Panel recommended that the A483 Junctions 3 – 6 improvement scheme should not proceed in its current form, as the case for change is not well-aligned with the Welsh Government's aim to reduce car mileage.

2.1.6 The Site has historically been part of an open cast coal mine, from 1964, but was subsequently back filled in 1976. The industrial nature of the former landscape is therefore no longer evident.

3 Design development and evolution

3.1.1 The original design concept for the Proposed Development, following initial technical and planning assessments is presented in the plan below (Figure 1). The scheme comprised solar photovoltaic electricity generating station and associated ancillary development, with an installed generation capacity of up to 57 MW. The scheme comprised solar panels and frames, inverters, transformers, cabling and substations. At the outset there was an intention to investigate the potential to also include an element of battery storage, however, in the early stages of design iteration matters around connection to the grid network and location on site were still to be resolved.

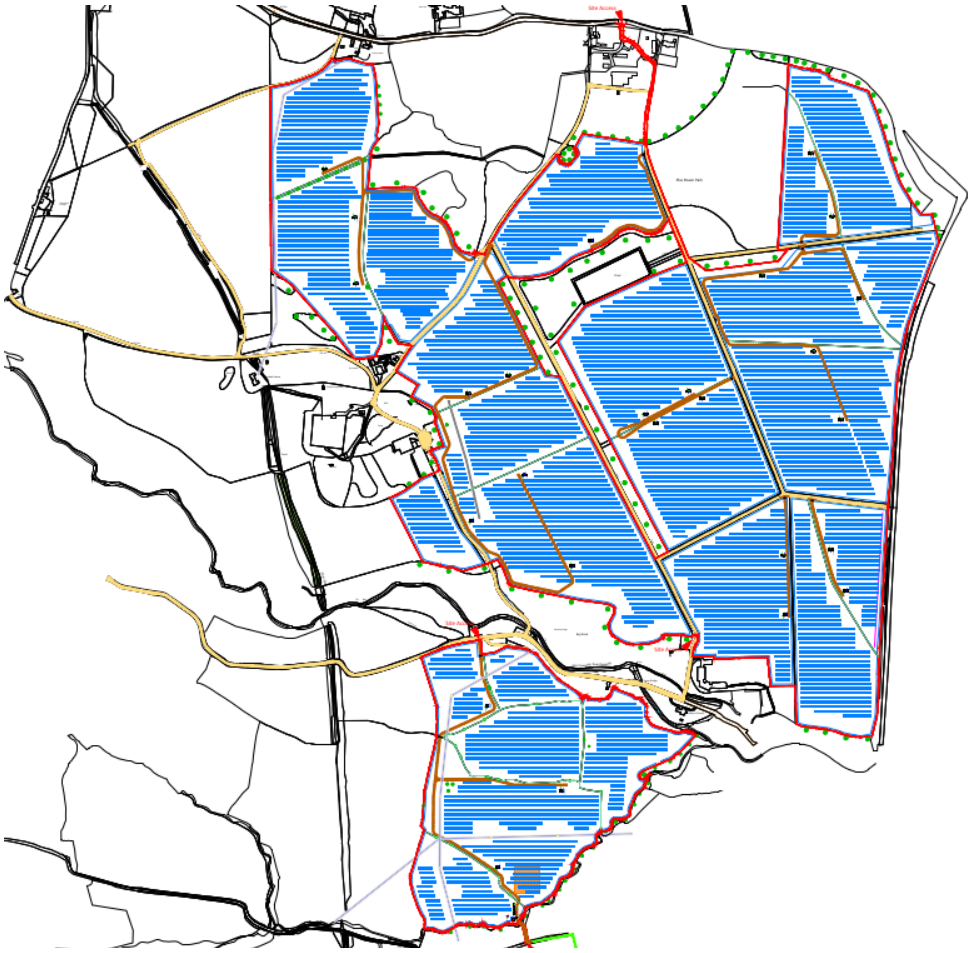


Figure 1 – Internal layout submitted within the 2020 EIA Screening and 2020 initial pre-application process.

October 2021

3.1.2 Following initial pre-application discussions with Wrexham County Borough Council (the Council) a second iteration was produced taking into account matters raised by officers in respect of impact on heritage assets and biodiversity mitigation and enhancement.

3.1.3 This version of the design was submitted as part of the original Environmental Impact Assessment (EIA) scoping report submitted in October 2020, and also consulted on as part of the first community consultation held in October 2021. This is presented within Figure 2. One of the key changes to the scheme was the incorporation of greater stand-offs between the proposed solar panels and existing trees and hedgerows.

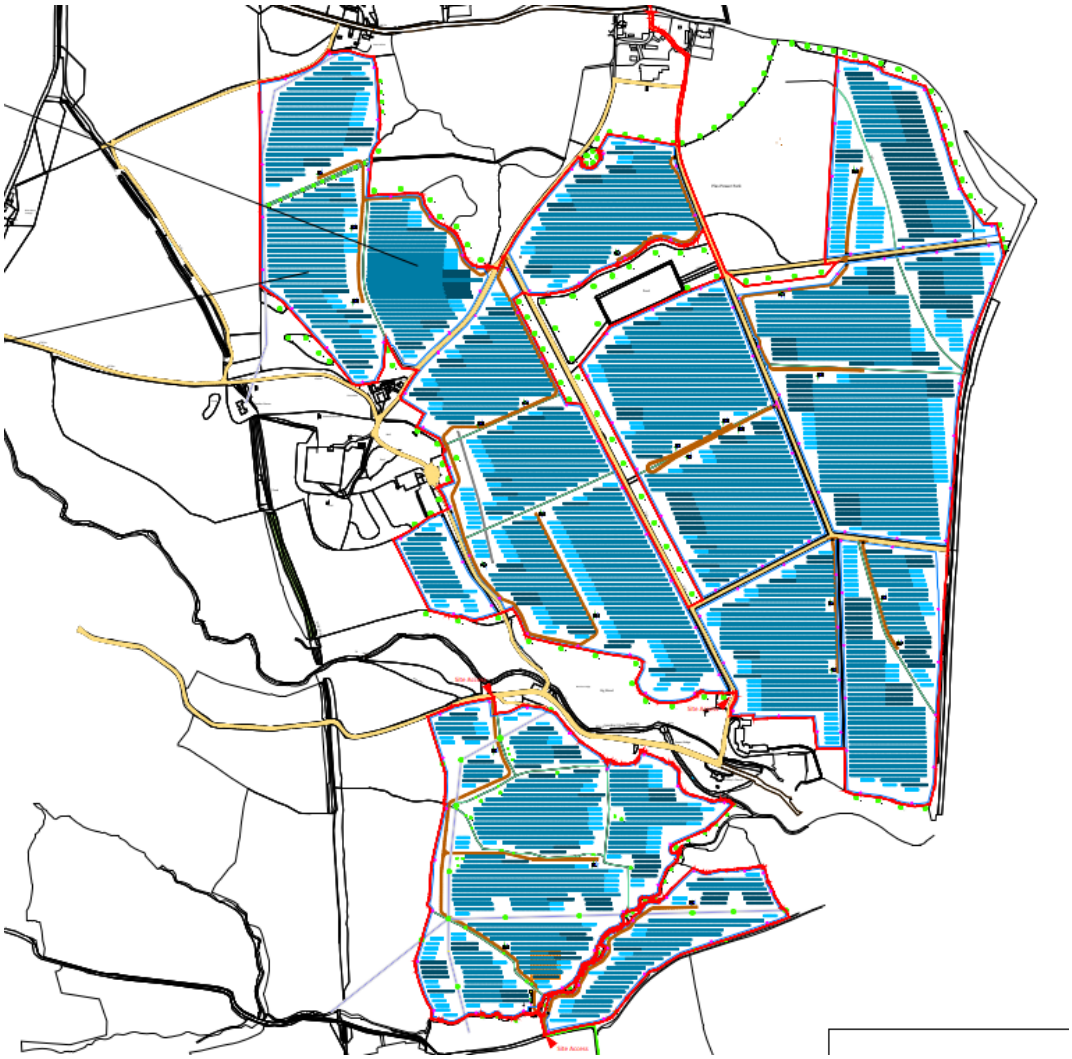


Figure 2 - Internal layout submitted within 2020 scoping report and 2021 community consultation

June 2023

3.1.4 A third design iteration was presented in the June 2023 Scoping Direction Request (Figure 3). The third design iteration represented a more significant change to that presented in 2020/2021. A key change to the design development at this stage was the removal of the land parcels from the Proposed Development that are south of the Plas Power Woods. The primary reason for this was the publication by Welsh Government of updated guidance relating to solar

development on Best and Most Versatile (BMV) agricultural land, and also the need to set further development away from the setting of the Offa's Dyke scheduled monument. The updated layout is presented in Figure 3 below. Due to the extent of changes the Applicant took the decision to undertake an updated EIA scoping, in June 2023.

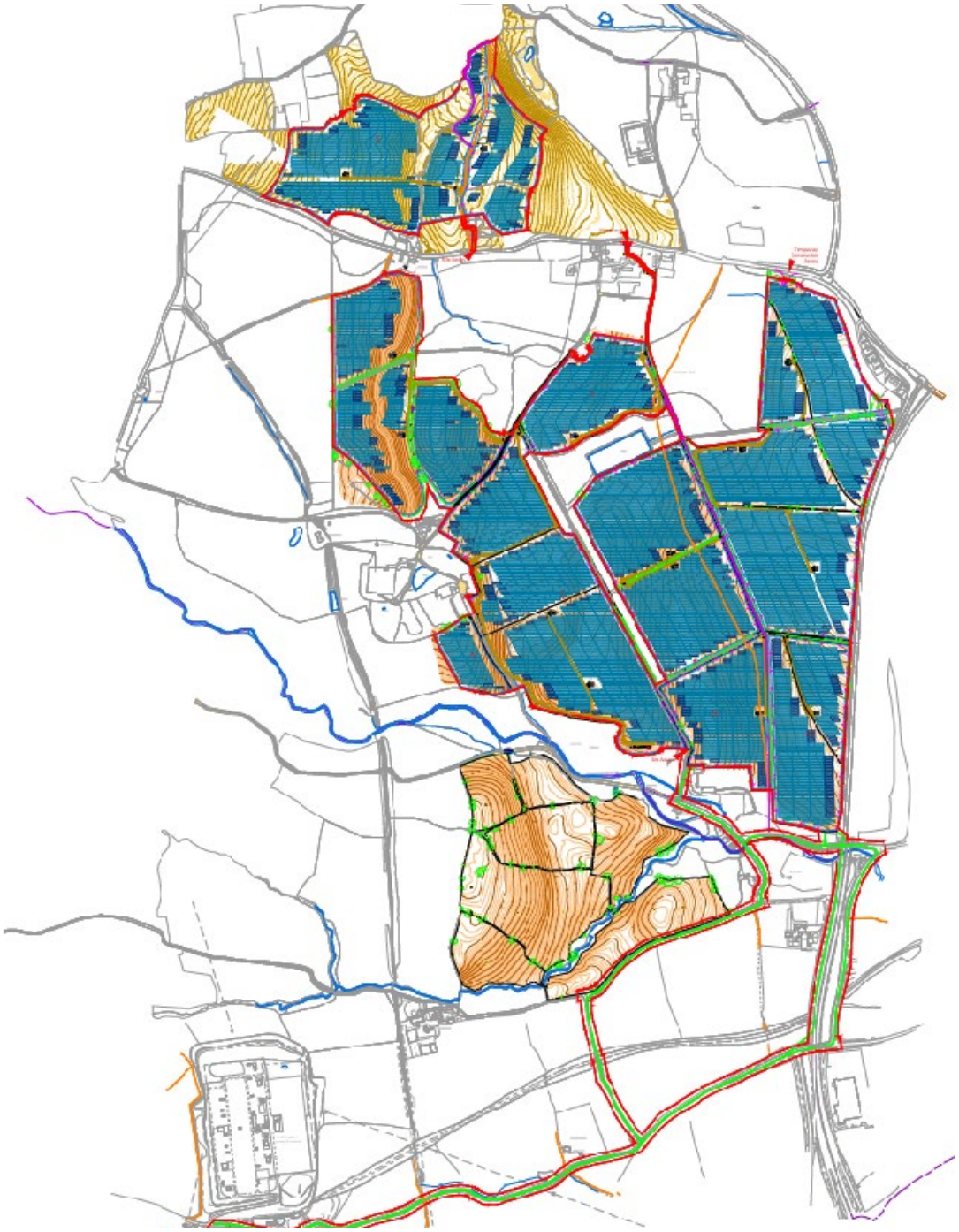


Figure 3: Presented in the Summer 2023 Scoping Direction Request and non-statutory community consultation.

February 2024

3.1.5 Following the 2023 Scoping Direction issued by PEDW and in light of responses from the 2023 non-statutory community consultation, a fourth design iteration was produced. This was presented within the formal Pre-Application Consultation (PAC) held between 21 February and 9 April 2024. The PAC version of the site layout is presented in Figure 4 below.

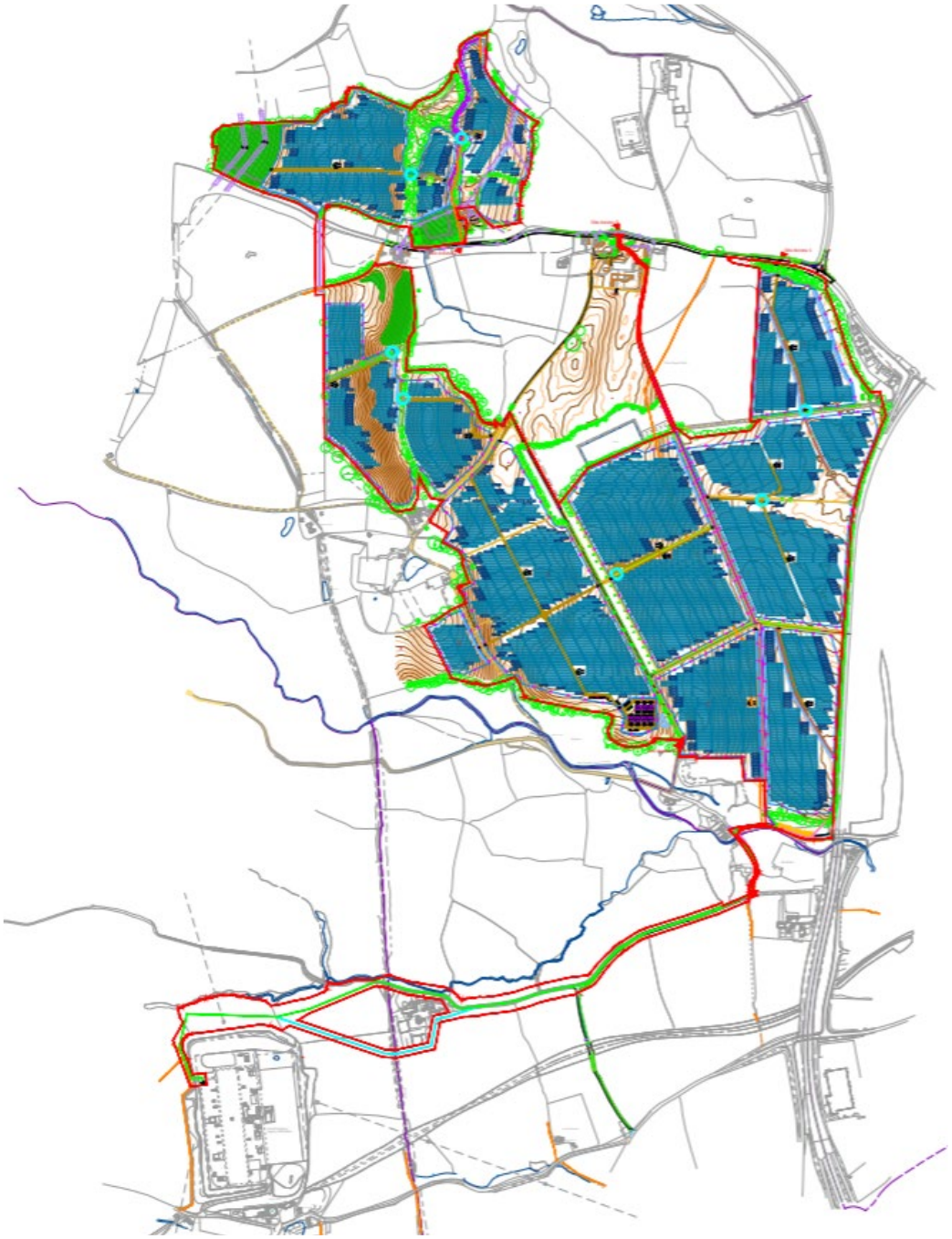


Figure 4: PAC Version Layout Plan

3.1.6 Following collaborative discussions with all stakeholders, the following amendments were accommodated on the above layout plan:

- Red line boundary changes to remove parcel south of residents on A525 & also to include internal access track which was omitted previously.
- Cable route options have been amended to show 1 preferred route with three option variations along the route.
- Changes to panel layout in fields south of the residents south of the A525.
- Inverter moved slightly south in field south of Foxes Hollow (property south of A525).
- Security fence moved in to enclose new panel layout south of A525 residents.
- Site fence moved to avoid RPA of veteran tree (T305).
- Access track moved to avoid tree (T272).
- Panels moved to avoid conflict with trees (G107, G106).
- Extension of access track to biodiversity enhancement area north of A525 in far western parcel.
- Scaling back of panels in the northern parcel on residential amenity grounds.

3.1.7 The current scheme has undergone further minor design amendments from that presented in the fourth (PAC) iteration above. This revision considers feedback received in in the PAC process. The red line boundary has remained unchanged. Further detail is set out within the proposal section below.

4 The Proposal

4.1.1 This section addresses each criterion as set out in DAS guidance that is considered relevant to the Proposed Development.

4.2 Layout

4.2.1 The location of the Development is shown on the Site Location Plan and the proposal with associated infrastructure works in the Site Layout Plan. The Site Layout shows the arrangement of the equipment, which has been carefully considered to ensure the efficient use of land to maximise clean energy generation whilst reducing potential adverse impacts on the local and wider environment. The following design principles and concepts have been incorporated into the layout Proposed Development through the design iteration process:

- Be landscape led, ensuring retention and enhancement of existing hedgerows, particularly species rich hedgerows, and trees where possible, working with the topography of the land and incorporating new planting.
- Incorporation of buffers to the existing and diverted public rights of way (PRoW), including additional landscaping to reduce visual impact on users of the routes;
- Minimising impacts on potentially affected residential properties by utilising offsets, buffers and landscaping in appropriate locations;
- Implementation of a comprehensive site wide hedgerow improvement strategy through reinforcement planting and enhanced management;
- Utilise existing hedgerow gaps for access to field parcels;
- Incorporating sufficient buffers to ancient woodland;
- Achieve high levels of biodiversity net gain by maximising opportunities to create high quality wildlife habitats through the landscape strategy, including through the creation of dedicated areas of biodiversity enhancement measures;
- Maximising layout efficiency through the siting of panels, substations, ancillary development and the BESS facility;
- Exploration of opportunities for further planting, i.e., native trees, scrub and grassland;
- Achieving safe site access and efficient and circulation within the Site to aid construction and operational maintenance; and
- Continued allowance for grazing of the Site to retain pastoral character and agricultural use.

4.2.2 Figure 5, below, shows the proposed site layout fixed for this submission, which incorporates the above design principles and is the culmination of extensive pre-application engagement and assessment that has taken place over a number of years.

4.2.3 The design changes that have taken place since the PAC process was concluded, in response to issues raised, include:

- Increased landscape and visual screening on the northern edge of the northern parcel between the Proposed Development and the southern boundary of the residential gardens that abut the Proposed Development. This is as a consequence of direct engagement with residents.
- Provision of an additional emergency access to the BESS facility, to further comply with the NFCC guidelines.
- Minor increases in buffers to Ancient Woodland, following consultation with the Woodland Trust, to ensure a 25m distance is maintained to all physical infrastructure (excluding security fencing, which maintains a 15m separation).
- Increase in the size of the attenuation pond adjacent to the BESS facility to ensure it is of a sufficient capacity to retain spent firewater in the unlikely event of fire.

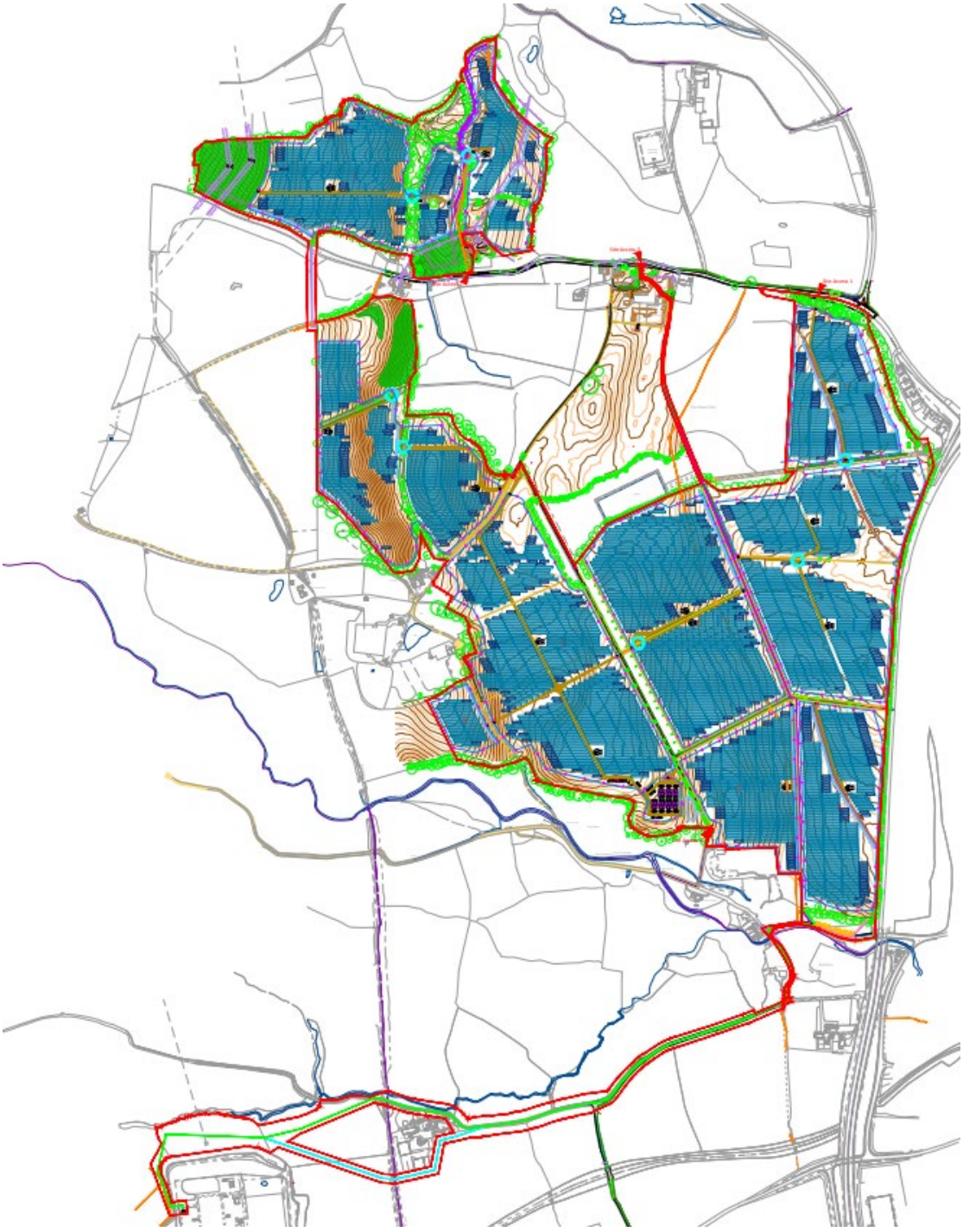


Figure 5: Proposed Site Layout

4.2.4 Two proposed site layouts are submitted in support of this Application; one with a BESS facility, and one without a BESS. The latter is to allow for a situation where the BESS connection does not materialise as expected. The with and without BESS site layout extracts are set out below in Figure 6.

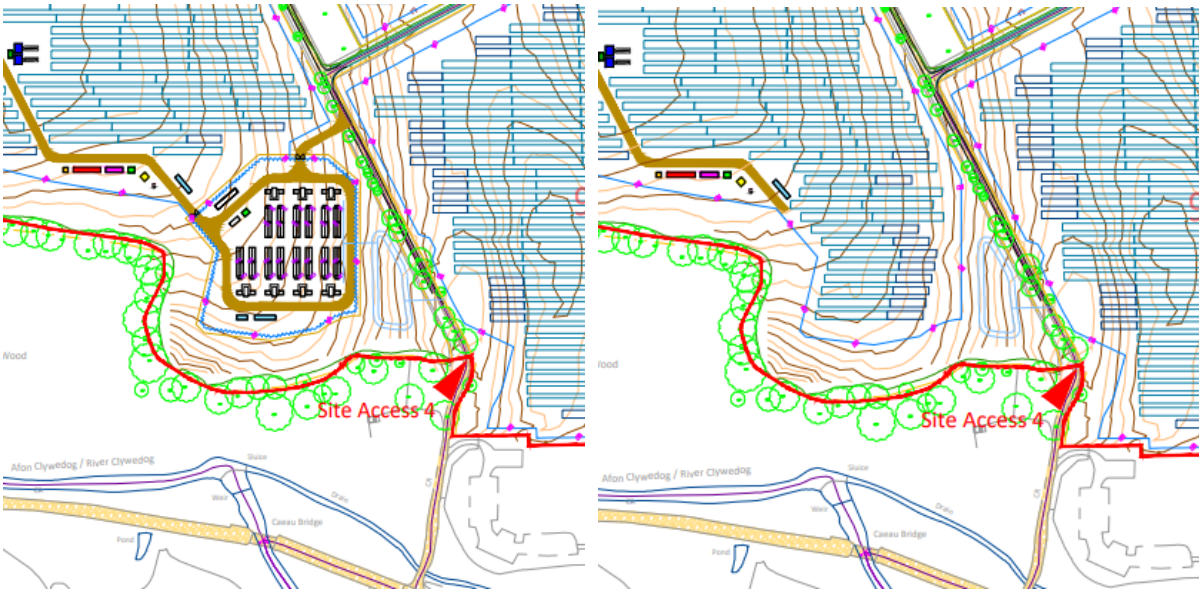


Figure 6: With and without BESS site layout proposals

4.3 Site Access

4.3.1 Criterion 9 of Policy 18 in Future Wales states that renewable and low carbon energy projects qualifying as DNSs will be permitted provided that the proposal does not have unacceptable impacts on the transport network through the transportation of components or source fuels during its construction and / or ongoing operation.

4.3.2 The submitted Planning Statement and Transport Assessment, both by Stantec, fully assess the scheme against relevant local and national policies and confirms that it is considered that the proposed development meets the objectives of Policy 18 of Future Wales, PPW and LDP policies SP2 and RE2.

4.3.3 The following figures (Figure 7 & Figure 8) sets out the proposed access arrangement for the Proposed Development.



Figure 7: Access 1, 2 & 3 Arrangements

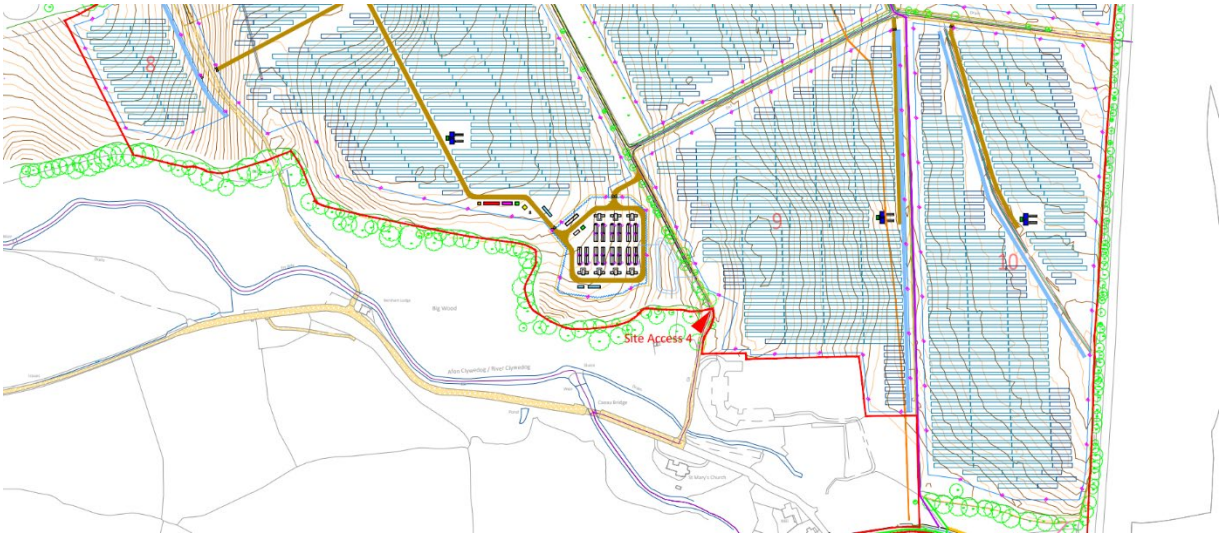


Figure 8: Access 4 Arrangement

Access 1: New Access from A525

4.3.4 Access 1 is the formation of a new access route into the Site from the A525. It would provide a route emerging some 75-100m west of the Heritage Way and A525 Junction. It is proposed that this access is initially created to provide access for the construction phase and then retained as a permanent access for future maintenance.

4.3.5 Concept design work to create a priority junction has been undertaken. To provide sufficient width to allow a large articulated vehicle to enter and exit the Site safely it is estimated that approximately 25m of the existing stone wall will need to be removed. Two trees will also need to be removed and the existing road sign will need to be relocated. It is proposed to retain the

stonework from the affected section of wall and use it to create the new entrance way to the Site with the wall curving round with the radii of the entrance junction.

4.3.6 Concept design drawings including vehicle swept path analysis and confirming the required visibility splay can be achieved are submitted as part of the Transport Assessment.

4.3.7 The formation of Access 1 ensures that it will not be necessary to utilise Access 3 during construction, which would have unacceptable implications for the amenity of residents whose properties are served by that access.

Access 2: Northern Plot Access, A525

4.3.8 This existing point of access on the A525 to the northern element of the Site is considered suitable for HGVs and is currently used by large agricultural vehicles. It will require advance signage to warn of construction vehicle movement and a potential temporary speed reduction via traffic management.

4.3.9 Concept design drawings including vehicle swept path analysis to reconfigure the access to accommodate the required vehicle types and turning movements as well as maintaining the access for residents in adjacent dwellings can also be found in Appendix D of the submitted Transport Assessment. The drawings indicate that the required visibility can be achieved with some vegetation removal. Turning movements will be restricted to right turn in and left turn out only for large vehicles.

Access 3: Existing Access from A525

4.3.10 Site Access 3 is the existing Home Farm access, which also serves a number of residential properties. This access will not be used for construction except in the initial site establishment phase whilst Site Access 1 is under construction. Site Access 3 may be used for maintenance access when the Proposed Development is operational. This will involve occasional visits from smaller vehicles, such as 4x4s.

Access 4: Existing Access to the South

4.3.11 Site Access 4 is obtained from the south of the Site off Plas Buckley Road. It is not proposed to use this access during construction, operation or decommissioning, but may be needed in exceptional circumstances and will be limited to staff or emergency vehicular access only, and would be limited to cars and LGVs.

4.4 Internal Access

4.4.1 Existing farm tracks will be used for internal access within the Site where possible during construction and operation. Where required, new access tracks will be formed, usually consisting of a layer of permeable crushed stone. Geosynthetic reinforcement or soil stabilisation may be used to reduce the depth of track construction. The surface will be a compact granular material (crushed rock) up to an approximate thickness of 0.3m, dependent on the ground conditions. Width will increase at bends and at the entrance point. The tracks will measure between 3.5m and 4.5m wide.

4.5 Community safety

4.5.1 The Proposed Development is static in nature and benefits from rigorous safety strategies and regulation, and as such there are no immediate risks to public safety beyond the Site.

4.5.2 During construction, the Site will be secured by using temporary security fencing. This will be positioned in locations where openings in the existing Site boundary would allow intentional vehicle or pedestrian access to the construction area.

4.5.3 In addition, CCTV monitoring will be installed as part of the Proposed Development to safeguard the development and the local community.

4.5.4 The operation of the solar farm will not present any risks in terms of hazardous materials, pollution, emissions or any other operational hazards.

4.5.5 In terms of the BESS element of the proposal, the design, development and manufacture of this element requires maintenance of high standards in respect of safety and operational sustainability, as confirmed in the submitted Outline Battery Safety Management Plan.

4.5.6 The proposed drainage design associated with the BESS element has allowed capacity for spent fire water, should it be required, to be captured and recycled for re-use. This has been managed by lining and appropriately sizing the attenuation pond downstream of the BESS compound and controlled via a pen-stock valve. This will allow contaminated water to be captured and stored away from local surface water or groundwater bodies, in the unlikely event of fire. The BESS development option has been designed to meet current guidance, notably that issued by the National Fire Chiefs Council (NFCC) relating to Grid Scale Battery Energy Storage System planning (November 2022), with regard to dual access and circulation, and will incorporate appropriate detection, monitoring and suppression systems in its final design.

4.5.7 Further detail on drainage is provided within the submitted Drainage Scheme and Outline Battery Safety Management Plan.

4.6 Environmental sustainability

4.6.1 The Proposed Development will provide a substantial source of low carbon renewable energy. There are clear and substantial benefits presented by the Proposed Development, primarily through the opportunity to provide a renewable and safe source of clean energy, but also through the conservation of biodiversity and food security

4.6.2 There is a strong local, national and international policy steer towards delivering ambitious reductions in carbon emissions through growth of renewable energy generation. Given the intended export capacity of up to 57 MWac, and provision of essential energy storage, the Proposed Development would make a substantial contribution towards these targets and in turn help to contribute towards environmentally friendly communities (renewable and low carbon energy used by houses).

4.6.3 The Proposed Development will supply electrical energy to the distribution network rather than generate demand.

4.6.4 The Welsh Government formally committed Wales to legally binding targets to deliver the goal of net-zero emissions. The Climate Change Committee recommended the following targets that the Proposed Development will contribute to:

- Carbon Budget 2 (2021-25): 37% average reduction with credit ("offset") limit of 0%;
- Carbon Budget 3 (2026-30): 58% average reduction;
- 2030 target: 63% reduction;
- 2040 target: 89% reduction; and
- 2050 target: 100% reduction (net zero).

4.6.5 The Proposed Development will also contribute to cost-effective energy generation and energy security with limited governmental subsidy and will, therefore, provide socio-economic and community benefits. Notably, the design of the Proposed Development will allow an efficient dual use of the land for renewable energy generation and agriculture.

4.6.6 To put the contribution of the Proposed Development into context, the 57MWac of energy generated is sufficient to provide power for 22,700 homes per year, saving 15,800 tonnes of carbon emissions, and is the equivalent of taking 10,800 combustion engine cars off the road per year.

4.6.7 The Proposed Development is designed with an expected operational lifetime of 40 years, after which the Site can be returned to its current state. In the meantime, however, during the

operation of the solar farm, the land under and around the solar panels can be used for grazing, continuing its agricultural use.

4.6.8 Solar farms can deliver significant benefits for the environment on a number of levels. Grazing provides an environmentally friendly and cost-effective method to manage vegetation growth on the Site without the need for chemicals or mechanical solutions. Typically less than 5% of the land is disturbed by the solar farm infrastructure, which can be fully removed at the end of its life and the land returned to food production. The land will have benefited from a break in intensive cultivation, improved soil health and increased carbon sequestration.

4.6.9 Solar projects, such as the Proposed Development are design to have negligible alteration to local drainage patterns, flow directions and will manage suspended sediments from entering the drainage channels. For example, use of SUDS including swales with appropriately seeded vegetation downstream solar PV module parcels capture and attenuate any large following high intensity rainfall events. In addition, filter strips (i.e., strips of seeded vegetation) are often proposed below and between rows of the solar PV modules to dissipate energy of surface water and reduces the risk of erosion.

4.6.10 The landscaping and habitat enhancements will significantly boost biodiversity across the site, and can further contribute positively to food security by enhancing pollinator biodiversity.

4.6.11 Once the Site is decommissioned, there will be significant potential for recycling many of the materials used in the Proposed Development. Solar panels are almost entirely made up of glass, aluminium, and silicon which can all be separated and recycled. Since January 2014, solar panels in the UK have been covered by The Waste Electrical and Electronic Equipment Regulations 2013 (as amended), which require recycling of the panels at the end of their operational life. The Applicant is a member of the PV Cycle UK take back scheme for this purpose. Further information on this is provided within the submitted ES.

4.7 Response to Planning Policy

4.7.1 The submitted Planning Statement and Transport Assessment consider compliance of the Proposed Development against relevant Planning Policy. A summary of this has been provided below.

4.7.2 Policy 17 of Future Wales provides strong support for the principle of developing renewable and low carbon energy and requires decision makers to give significant weight to the need to meet Wales' international commitments, and the target to generate significant weight to the need to meet Wales' international commitments, and the target to generate 70% of consumed electricity by renewable means by 2030 (being a higher percentage target being consulted upon).

4.7.3 Proposals for renewable and low carbon energy projects qualifying as DNS will be permitted subject to Policy 17 of Future Wales and the criteria set out in Policy 18 of Future Wales, this is detailed within the submitted Planning Statement.

4.7.4 The LDP is supportive of proposals for renewable resources to resist and mitigate the consequences of climate change. Objective SO10 of the LDP seeks to promote the use of renewable resources, and Policy RE2 (Renewable Energy Schemes) states that proposals to generate energy from renewable and low carbon sources will be supported. The policy states that schemes of <10MW are to be directed to the solar local search areas (LSA) identified on the Proposals Map. However, the supported text to the policy at paragraph 4.222 states:

> *"These are the preferred areas for solar but this would not necessarily preclude applications coming forward outside these areas if deemed appropriate and considered acceptable in accordance with other policies in the plan and PPW."*

4.7.5 The proposal accords with planning policy requirements for landscape and visual; residential amenity; biodiversity; historic and cultural heritage; noise and vibration; glint and glare; highways; drainage; and minerals.

4.7.6 Overall, national and local planning policy is overwhelmingly supportive of renewable energy developments and seek to facilitate their delivery in appropriate locations. Therefore, the in-principle acceptability of the Proposed Development is considered to be established, and there are no other planning considerations that would deem the proposal unacceptable.

5 Summary

5.1.1 Overall, the Proposed Development represents a scheme that is appropriate to the setting of the Site, with the intention to provide a proposal of sympathetic scale, form and massing. This Statement documents the iteration of the Proposed Development over various stages of consultation and assessment and explains the changes that have occurred and why. The Proposed Development now presented for consideration has had due regard to the technical and environmental constraints of the Site and surrounding area, and to matters that impact on the local and wider community. The rational for the final design and layout the Proposed Development is considered to be soundly based and in accordance with local and national planning policies.