

**From:** Richard Sowden [Redacted S.40]  
**Sent:** 12 May 2021 12:08  
**To:** Williams, Arwel (ESNR - ERA - Land, Nature & Forestry) [Redacted S.40]  
**Cc:** Andy Frost [Redacted S.40]; Kirk Hill [Redacted S.40]  
**Subject:** Blackberry Lane Solar - revises site selection report

Hi Arwel

Text revised to beef up the point discussed on our call earlier. This replaces the version emailed across yesterday. The maps are unchanged.

Andy. Please could you check the comment on solar irradiation.

Many thanks

Richard

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## **Blackberry Lane Solar Planning Application - Site Selection Review**

### **How is site selection dealt with in the Blackberry Lane application?**

1. Wessex Solar Energy's (WSE's) findings on site selection are reported in section 5 of the Environmental Statement (ES) Vol 1. Figures 5.1 and 5.2 from ES Vol 3 are also relevant. Paragraphs 2 – 6 below set out these findings.
2. Stage 1 Site Screening Study – carried out on the whole of Pembrokeshire in 2013.  
Exclusion of areas due to the presence of:
  - Sites of Special Scientific Interest
  - Special Areas of Conservation
  - Special Protection Areas
  - RAMSAR sites
  - Scheduled Monuments
  - National Parks
  - National Nature Reserves
  - Local Nature Reserves
  - Conservation Areas
  - Country Parks
  - Built Up Areas
  - AONBs
  - World Heritage Sites
  - Historic Registered Landscapes
  - National Trails
  - Registered Landscapes of Outstanding and of Special Interest
  - Flood Zone 3
  - Areas >2km from the 33kV electricity distribution network
  - Grade 1 or 2 Agricultural Land Classification (ALC) for England and Wales 1985
3. Stage 2 Site Suitability Investigation - consideration of 7 specific sites, including site visits, against the following criteria: existing land-use, planning designation, visual impact, access, topography, shading, size, PRow, cumulative impact. In practice, 5 out of 7 were actually eliminated as a result of grid connection applications as follows:
  - Site 1 Withyhedge (grade 3/4) – rejected due to insufficient grid export capacity
  - Site 2 Chapel Hill (grade 3/4) – site now developed and operational
  - Site 3 Dale Road (grade 3/non-agricultural) – rejected due to insufficient grid export capacity
  - Site 4 Martletwy (grade 3/4) – rejected due to insufficient grid export capacity
  - Site 5 Blackberry Lane
  - Site 6 Corseside (grade 3/4) - rejected due to insufficient grid export capacity

- Site 7 Clarboston Road (grade 3/4) - rejected due to insufficient grid export capacity
4. Alternative Sites - since the original site screening in 2013, Western Power Distribution (WPD) has produced updated information showing that none of their substations in Pembrokeshire has more than 1MW export capacity. WSE quote this as evidence for there being no other possible sites in Pembrokeshire.
  5. Reducing the scheme capacity in order to use grade 3 land only - WSE state that the scheme is economically viable at a generating capacity of 22MW, but no less, due to the relatively high grid connection cost. No figures are included to support this.
  6. Consideration of alternative technologies - the proposed technology is fixed tilt panels, which reduces the land take compared with fixed panels. Single axis tracking is also considered but rejected due to topography and increased land take. No consideration has been given to bi-facial panels which would further reduce the land take but which are more expensive. Battery storage is considered but rejected due to the export capacity restrictions imposed by the transmission network in South Wales. No reference was found to consideration of a private wire arrangement.

#### What approach has been taken by applicants in similar applications in Wales?

7. The following applications have been reviewed to identify the approach taken to site selection by the applicants. In some cases this is referred to as sequential site selection
  - Rush Wall Solar Preapplication (BRS Energy, 75MW, Newport)  
<https://bsrenergy.com/rush-wall-solar/>
  - Llanwern Solar (Gwent Farmers Community Solar, 50MW, Newport)
  - Brynrhyd Solar Farm (Island Green Power, Pontardulais)
  - Tycoes Solar Farm, Carmarthenshire)
8. There does not appear to be a prescribed process within the planning framework for this process but there is a common approach amongst these applications based on the criteria below.
  - Previously developed land
  - ALC
  - A suitable size and orientation
  - Statutory designations
  - Solar irradiation
  - Compatible neighbouring uses
  - Grid connection
  - A deliverable and accessible site

**Commented [RS1]:** I have reviewed this online and at this stage, it only appears to be a screening request and does not include any sequential site selection?

**Commented [RS2]:** I cannot find sequential site selection report

### A revised review of site selection

9. ADAS has now undertaken a revised review of site selection to determine if there are any alternative sites suitable for a similar sized solar PV scheme. Our methodology is based on the approaches taken in the list of planning applications in para 7 above. Our methodology is summarised below:

Selection criteria	Data sources	Methodology
Land use / ALC grade	Welsh Government Predictive Agricultural Land Classification	Exclusion of ALC grades 1 – 3a and urban land
Environmental and heritage designations	Natural Resources Wales (NRW), CADW and Pembrokeshire County Council	Exclusion of National Park, National / Local Nature Reserves, Special Protected Areas, Sites of Special Scientific Interest, Special Areas of Conservation, Scheduled Monuments, Conservation Areas, Historic Parks & Gardens, Listed Buildings, NRW Common Land, NRW Open Country CROW Access Land and Commons with Deeds for Access
Public rights of way (PRoW)	Pembrokeshire County Council	Footpaths and bridleways are shown on the map at Appendix 1
Slope	Ordnance Survey 50m DEM	Exclusion of land with a slope greater than 10°
Suitable size	ADAS in-house software	Measurement of the area of unconstrained land in sites A – D and comparison with the 34.25 ha required for the Blackberry Lane proposal. Potential sites identified are in one block or multiple adjacent blocks.
Solar irradiation	2019 The World Bank, Source: Global Solar Atlas 2.0, Solar resource data: Solargis	Visual check of solar irradiation map – which shows that the search area is either 951 -1000 or 1001 – 1050 kWh/m <sup>2</sup> . No sites have been excluded on the basis of solar irradiation.
Grid connection	National Grid and Western Power Distribution (WPD)	<ul style="list-style-type: none"> <li>The map at Appendix 1 shows buffers at 2, 5 and 10 km from the point of connection at Golden Hill Substation.</li> <li>Unconstrained sites to the North of the Cleddau River and its tributaries are excluded because installing a grid connection would not be possible. Unconstrained sites to the South of the A447 and the Tenby to Pembroke Dock railway are included.</li> <li>We have not contacted WPD to request new connection quotes.</li> </ul>
Overhead electricity lines	National Grid and Western Power Distribution (WPD)	A buffer of 5m has been used for 11 and 33kv lines and 10m for 132 / 400 kv lines.
Land ownership		This has not been investigated

**Commented [RS3]:** Andy, please can check this as it is difficult to identify the colours on your map

10. There are 4 potential sites within the 10km buffer labelled A – D. Individual site maps are shown in Appendix 2. Our initial findings on these sites are set out below:

- Site A (35.8ha) – includes some of the land used for the existing Blackberry Lane proposal but also includes adjacent unconstrained land. It is slightly bigger than the

proposed site. A footpath crosses the site which might require re-direction and there is an overhead electricity line which has been shown with a 10m buffer either side in which panels could not be placed. Progressing this site would probably not require a new grid connection application but would require the negotiation of land rental agreements with the relevant landowners. These are commercial matters outside the scope of this review.

- Site B (29.5 ha) – is south west of Pembroke, adjacent to Maiden Wells. It is slightly smaller than the proposed site. A footpath crosses the site which might require re-direction. It is within 5km of Golden Hill Substation but unless an alternative point of connection is available, the connection route would be across the city and would be expensive. It would require the negotiation of land rental agreements with the site landowners. Again, these are commercial matters outside the scope of this review.
- Site C (138.4ha) – is further south west of Pembroke than Site B and comprises 4 separate blocks of land. Site C appears to include sites 2 and 6 of the sites identified by Wessex Solar through their original (2013) site selection process. Site 2 was developed and is now operational and site 6 was rejected due to insufficient export capacity. At the western end, it is immediately adjacent to the National Park and would be highly visible from it. It is between 5 and 10km from Golden Hill Substation and like site B, unless an alternative point of connection is available, the connection route would be across the city and would be expensive. It would require the negotiation of land rental agreements with the site landowners and again, these are commercial matters outside the scope of this review.
- Site D (108.5ha) – is to the east of the proposed site and close to the edge of the 10km grid connection radius, although the intervening land is almost entirely agricultural and as a result, would probably have a more viable connection route than sites B or C. Site D is comprised of 5 separate blocks of land but unlike site C, these are not all adjacent to each other. In practice, if a solar PV scheme were to be considered, the best of the individual blocks would probably be selected. It would require the negotiation of land rental agreements with the site landowners and again, these are commercial matters outside the scope of this review.

## Summary

11. Whilst the original site selection process carried out by Wessex Solar was adequate in 2013, it should have been revised when the Welsh Government released its new predictive ALC map in 2017.
12. The undertook a more comprehensive process to identify alternative sites.
13. A new review, carried out by ADAS, and using the same criteria as the applications listed in para 7, has identified 4 other potentials sites within a 10km radius of the proposed

point of connection. Of these, the most likely to progress, is site A which includes some of the proposed Blackberry Lane site, because Wessex Solar already has a grid connection offer and therefore may not need to submit a new application to WPD (which would be unlikely to result in a viable connection offer due to the export constraints which now exist across WPD's network in Pembrokeshire). In our view, it is surprising that Wessex Solar has not been able to secure land rental agreements with the landowners surrounding the original Blackberry Lane site in order that the scheme can go ahead at the same export capacity but avoiding best and most versatile agricultural land.

14. The application does not provide evidence relating to the consideration of higher performance systems, including panel tracking and bi-facial panels, to reduce the land take while maintaining the scheme's generating capacity. This also applies to including battery storage and/or a private wire arrangement to increase the revenue allowing a reduction of the land take. Battery storage is "considered but rejected due to the export capacity restrictions imposed by the transmission network in South Wales" but with no supporting evidence. No reference was found to consideration of a private wire arrangement.