



Contents

Page No

1. Introduction	3
2. Purpose and need	3 - 4
3. The site and surroundings	4 – 5
Character	
4. Amount	5 – 6
5. Layout	6 - 7
6. Scale	7
Environmental Sustainability	
7. Landscape Visual Impact	7 - 8
8. Appearance	8 – 9
Accessibility, Community safety, Movement to and from site	
9. Access	9
10. The case for permission	9 -10
11. Noise level	10
12. Policy	10 - 12
13. Conclusion	12

1 Introduction

- 1.1 This Statement assesses relevant planning policies supporting a proposal by Solar Ventures Ltd to erect a 5 MW solar PV array at Williams Farm, Wrexham, LL13 9XS
- 1.2 The position of the proposed solar array layout was determined following careful consideration of a combination of factors including siting and design and a formal Public Consultation. The site lies within the Borough of Wrexham Council.

2 Purpose and Need

- 2.1 Government guidance as well as national and local plans are clear about the need for more renewable energy systems to be incorporated into development whatever it may be.
- 2.2 For the purposes of the proposed development, PV cells represent the preferred technology. PV technology is uncomplicated, the technology is found on most modern calculators and can be used to generate electricity on a large scale.
- 2.3 The solar panels will generate energy using the sun's rays – this is an abundant natural resource. It is non-polluting, clean and sustainable. As can be seen from Figure 1 below, in a good solar radiation site like this system can be expected to generate in the region of 500,000 kWh of green energy per year.
- 2.4 In terms of the benefits the wider community, the solar farm will generate enough electricity to power around 1000 homes per year. Using the DEFRA 2007 figure of 0.523 kg of CO₂/kWh the PV array will reduce emissions of CO₂ into the atmosphere by around 1000 tons/year.

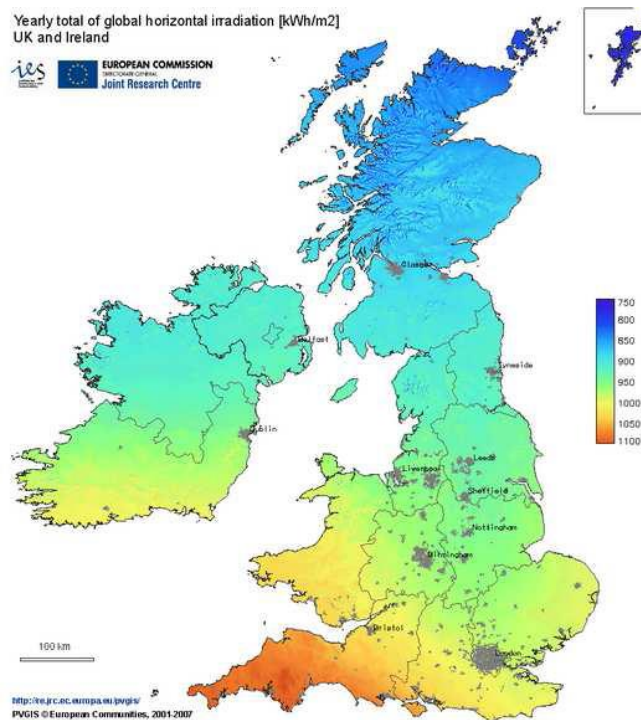


Figure 1: Yearly total of global horizontal irradiation (kWh/m²)

- 2.5 The purpose of this planning supporting statement (including a design and access statement) is to provide the local planning authority with relevant background information to the proposal and the necessary objective criteria to address the key development control issues associated with the determination of this application.
- 2.6 This statement also provides an objective assessment of the compliance of this development proposal against relevant planning policies and considerations.

3 The Site and Surroundings

- 3.1 The Site is located to the immediate south and east of the Wrexham Industrial Estate, some 2.5km southeast of the outskirts of Wrexham itself.
- 3.2 It straddles the River Clwyd, with the majority of the Site lying to the south of the river, generally comprising open grass pasture, with fields within the Site demarcated by short hedgerows and wire fences (Plate 5).
- 3.3 Boundary hedges are more substantial, often including mature and semi-mature tree growth.

- 3.4 The south eastern area of the Site is characterised by a number of derelict brick buildings, previously components of the much former wider munitions works which date to World War II.
- 3.5 The land on which the arrays are proposed to be sited has been assessed as being Grade 3 B land as identified from the mapping system of Natural England, the lowest class and is around 20 acres (8 ha) in total.
- 3.6 The constraints of this area are explored more fully within the Landscape Visual Impact Assessment (LVIA).

4 Amount

- 4.1 The development proposed is the installation of 20,000 Solar 250W ground mounted photovoltaic cells over an area of approximately (25 acres) in two adjoining fields. The PV farm will then be connected to an existing Substation to the South West of the site.
- 4.2 The array installation consists of modules using mono crystalline silicon technology built into steel trays mounted on a Ground mount galvanised steel frame system.



Ground Mount System Example

- 4.3 Photovoltaic Panels (PV's) convert daylight into electricity therefore direct sunlight is not required.
- 4.4 The installed capacity will be 5 MW and the anticipated annual production will be around 500,000 kWh.

4.5 There is proposed to be three inverter housings, customer MV building and a Direct Network Operator (DNO) building as well as parking areas and maintenance tracks.

5 Layout

5.1 The solar panels will be mounted in the fields as identified in the accompanying drawings.

5.2 The panels will be on fixed mounting frames in portrait orientation two panels deep with a total height of 2.2 metres. The panels are not laid flat on the ground, but at an angle of 25 degrees.

5.3 A 4 metre space between the mounts from the back of one array to the front of the next array will be left. This is wide enough to allow for routine maintenance without damage to the arrays and would allow livestock (sheep) to still graze the land and is considered to be an acceptable and sustainable form of diversification in compliance with Plan Policy.

5.4 Due to the scale of the proposed system there is a requirement to fence off the arrays and as part of this proposal. A 2 metre post and rail perimeter fence, which will be located 5 metres from the established boundary perimeters of the fields

5.5 The Panels will then be located a further 5 metres from the fence, thereby creating a large buffer zone thus reducing the perceived impact of closeness of the panels.

5.6 Closed circuit television will also be required for security purposes; these will be mounted on the fence line at a height of 4 m and will be line of site infrared, therefore negating the requirement for any lighting.

6 Scale

6.1 The proposal will include 20,000 panels; mounting frames secured with ground mount footing ancillary equipment, the grid connection and transformer housings.

6.2 The scale is considered appropriate for the size of the development and sits well in the field.

6.3 The frame height is the lowest available for this particular type of installation in order to minimise any perceived visual impact on neighbouring properties and the wider locality.

- 6.4 The panels are located ample distance away from the boundary hedge line which will allow for continued growth and maintenance of the hedge and tree line without inference. The distance will also seek to minimise any overshadowing issues that may occur.

7 Landscape and Visual Impact

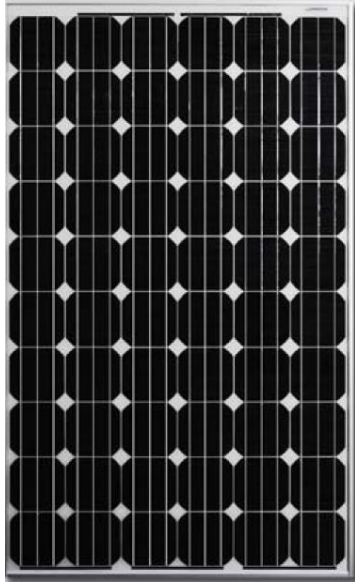
- 7.1 A full and comprehensive Landscape Visual Impact Assessment (LVIA) has been carried out on the site and accompanies this supporting statement.
- 7.2 In summary the site is within a mixed industrial/agricultural setting and the established surroundings would assist in assimilating the panels into the landscape helping filter and screen views. The topography of the site is mainly flat, further reducing visual disturbance from perceived vantage points.
- 7.3 Most of the highways within the locality (where there are potential views of the panels) are screened from surrounding fields (and the site) by well established and thick vegetation and hedgerow planting.
- 7.4 The adjoining highway is a National speed limit road and views of the proposed site will only leave glimpses of the panels and no lasting impressions of the site will occur.
- 7.5 The existing trees and hedgerows to the perimeter of the site will be maintained and managed and not reduced in height. Given the height this will prevent any views of the PV's; therefore the proposal will not affect the character and appearance or the setting of the area, in line Tan 8.
- 7.6 Further planting will be introduced in areas identified in the LVIA in order to minimise any perceived visual impact the panels may have on neighbouring properties.

8 Appearance

- 8.1 The scale of the project is discussed above and the layout of the development shown on the accompanying drawings.
- 8.2 The arrays construction is simple in terms of its form as can be seen from the plans. The finished arrays will appear as a dark entity blending in well with the network of existing field patchwork.
- 8.3 The panels are black/blue in appearance and absorb the sunlight. The frames will be a dull galvanised metal finish, thereby reducing any Glint/Glare that would

normally be associated with this type of project. Glint/Glare impact is assessed as part of the LVIA.

- 8.4 The project will have a relatively low profile unlike other forms of renewable energy generation such as wind turbines that can generally be seen over many miles. The mono crystalline panel does not have any reflective properties which will also help reduce visual disturbance.



Typical panel example

9 Access

- 9.1 There is an existing track network within the development site which are designed to accommodate large farm vehicles, however the solar panels will have no effect on vehicle movement or parking other than during the installation possibly. This will be a minimal, temporary effect as the installers will be able to park within the site. A formal transport assessment is submitted as part of the application
- 9.2 Once the site is built there will be a small number of vehicle movements generated (1-8) per year which will be for routine maintenance purposes. This is considered minimal and will not put any unnecessary pressure on the road network systems.
- 9.3 There is no public access to the development as it is located on private land.

10 The Case for Permission

- 10.1 Government guidance as well as national and local plans are clear about the need for more renewable energy systems to be incorporated into development whatever it may be.
- 10.2 This statement examines that the proposed installation is in line with the stated objectives of both local and national government in relation to renewable energy generation and that the installation will not detract from the rural character and appearance of that area.
- 10.3 The proposed scheme uses proven and viable technology and also looks to provide a significant reduction in restrictive costs. The generation of electricity using the Panels does not produce any CO₂; consequently the Panels would reduce CO₂ emissions.

11 Noise level

- 11.1 The solar panels are fixed mounted and do not track the sun, therefore no noise will be generated from the panels.
- 11.2 The noise from the inverters will be at an ambient level of less than 65 decibels and will not be audible outside of the site. To put level this in context normal conversation speech is also measured at 65 decibels.

12 POLICY

- 12.1 There is widespread support for alternative means of renewable energy at international, national and local levels, with increasing pressure to tackle climate change through reducing carbon emissions, such as those produced by the use of fossil fuels.

National Policy

- 12.2 "Planning Policy Wales" provides the strategic policy framework for the effective preparation of local planning authorities' development plans. This is supplemented by 21 topic-based Technical Advice Notes (Wales) (TANs).
- 12.3 TAN 8 – Renewable energy, relates to the land use planning considerations of renewable energy, however UK and national energy policy provide its context.

- 12.4 Energy policy is a reserved function that is not devolved to the Assembly Government. Nevertheless, all decisions relating to renewable energy in Wales must take account of the Assembly Government's policy
- 12.5 The renewable energy target for Wales is 4TWh. This equates to an installed renewables capacity of about 1500MW. Installed currently is a capacity of around 450MW, comprising of onshore and offshore wind, biomass and hydro, which generates approximately 1.4TWh per year. Therefore there is a requirement of about 2.6TWh to meet the national target; this means about 900 - 1000MW of additional renewable generation.

Local Policy

- 12.6 Wrexham Borough Councils own renewable energy Policy is Policy PS 12 of the Adopted Local Plan
- 12.7 The Policy states that *"Proposals for the generation of energy from renewable sources will be supported provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development (including any electricity transmission facilities needed) on the landscape, public safety, and the local environment."*
- 12.8 The consideration of this type of renewable energy has been driven by cost effectiveness such as build cost, running cost, and maintenance of the property, the use of proven technology to deliver carbon reduction and finally the durability of the PVs in this type of environment being balanced against the harm the proposal may cause on the characteristic of the rural setting in line with Policy PS 12 of the Adopted Local Plan and TAN 8.
- 12.9 The cumulative visual effect of the solar panel system is considered minimal and will not unduly harm the character, amenity or appearance of the wider locality.
- 12.10 The site is not set within or close to any special land designation such as SSSI, ANOB or Conservation/Costal Area.
- 12.11 This proposal is of benefit to the environment whilst reducing energy costs for the property. A PV array of this scale will provide a significant contribution to renewable energy targets. By locating the rows of panels away from the hedges the panels are less likely to interfere with wildlife.
- 12.12 The reduction in finite energy consumption will be significant and will outweigh the loss of the small area of land the arrays will be sited on, therefore in compliance with Policy.

12.13 The proposed development is also far enough removed from the built environment so as to cause little or no detrimental impact to the setting of the area therefore conforming to PS 12 of the Adopted Local Plan and TAN 8.

13 Conclusion

- 13.1 Producing electricity with PV emits no pollution, produces no greenhouse gases and uses no finite fossil-fuel resources. Where, as has been generally recognised, the current consumption of and reliance on fossil fuels is unsustainable, there is a very real need to find a viable long term alternative solution.
- 13.2 In addition, it is now widely accepted that climate change is happening and a key contributory factor are carbon emissions from the use of fossil fuels. The increased production of energy from renewable sources, such as solar PV, has very real benefits in off-set savings in carbon dioxide emissions and reducing the potential impact of greenhouse gases on climate change. It will also ensure a constant and affordable source of energy, contribute to economic stability and provide a further form of diversification to support rural economies.
- 13.3 The solar panels are constructed from materials that are recyclable. They have a prospective lifetime use of between 25 years to 40 years without the need for replacement. At the end of their productive lifespan and when the site is to be decommissioned, the panels will be collected by the manufacturer for recycling, ensuring a minimum of wastage.
- 13.4 Solar electricity systems are in many cases economically superior to conventional power systems. The operating costs are low because solar electricity needs very little maintenance, very few spare parts, and no fuel.
- 13.5 Solar electricity is fully automatic and therefore suitable for unmanned operation. There are no moving parts, so the system has a very long lifetime, and it is virtually maintenance-free. If a solar electricity system has been correctly designed, no other system can match its reliability.
- 13.6 The Government is keen to encourage greater deployment of such technologies as the benefits are many. They can help tackle climate change, reduce reliance on centrally generated electricity and increase security of energy supplies.

- 13.7 Furthermore any perceived impact is mitigated by the great social, economic and environmental benefits of the solar panels which will provide a clean and sustainable source of energy that will help to contribute towards the counties overall energy consumption demands in line with Tan 8 and PS 12 of the Adopted Local Plan.
- 13.8 It is submitted that this application is an entirely satisfactory form of development having regard to TAN 8 and therefore planning permission should be granted.