

Afon Llan Solar Park

Non-technical Summary of Environmental Report

Introduction

Wessex Solar Energy proposes to construct and operate a 9 megawatt (MW) Solar Park at a site approximately 1.9 km from Clydach, Pant-Iassau is approximately 650m to the south with Felindre 2.4 km to the north west. The location of the project is shown in Figure 1.

The purpose of the Project is to construct and operate a Solar Park that will generate electricity in a sustainable manner.

A planning application for the project will be lodged with City and County of Swansea Council and will be considered by the Council over the course of the coming months.

The planning application has been accompanied by a detailed Environmental Report that provides information on the predicted environmental effects of the proposed development. This non-technical summary provides a brief overview of the Environmental Report.

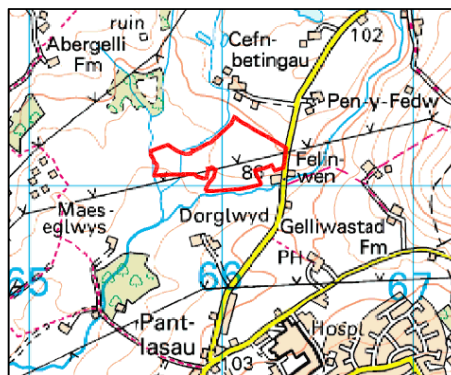


Figure 1 – Site Location

Wessex Solar Energy

Wessex Solar Energy is a development company involved with the development of Solar Park projects in the United Kingdom (UK). The company is looking at a portfolio of sites across England and South Wales for development and has identified the proposed site as being an ideal site for such a project, satisfying, as it does, a number of key criteria for Solar Park projects.

The company draws on the experience of a group of dedicated engineers, environmental scientists and financiers with many years of experience in the renewable energy and conventional power generation sector. Wessex Solar Energy is committed to developing projects in an environmentally responsible and sustainable manner.

The Site

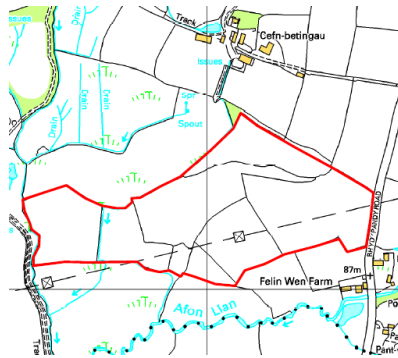


Figure 2 – Site Boundary

The proposed Solar Park is located within the site shown in Figures 1 and 2, which is centred at Ordnance Survey Grid Reference 265955, 201127. The site comprises seven fields (pasture), totalling 13.89 ha.

The Development site falls within the jurisdiction of City and County of Swansea Council and Mawr Community Council.

There are a small number of scattered houses in the vicinity of the site, as can be seen in Figure 2 above. The closest of these is Felin Wen Court located 60m to the south east, with Cefn Betingau farm complex 100m to the north, Pen-y-fedw about 250 m north east and Llyn-Y-Fan 500m to the north. Views of the site from these properties are largely screened by topography and intervening vegetation.

There are no footpaths or bridleways which cross the site.

The majority of the site is southwest facing. At its highest point in the north eastern field the site is 98m AOD and at its lowest point in the south western field is 78m AOD.

Access to the site is achieved via the M4, onto the Heol Maes Eglwys road and along the Rhyd-Y-Pandy Road, before entering the site via the existing access in the north east corner of the site.

The Project

Photovoltaic (PV) technology is uncomplicated and is relatively unobtrusive when compared to other forms of renewable electricity generation, such as wind farms, which can be highly visible for many miles.

The PV panels will be placed horizontally on structures inclined at between 20 and 35 degrees facing to the south with a maximum height 3.5 m from ground level.

To ensure that the panels remain in their proper position they will be fixed onto steel frames that will, in turn, either be set into purpose built concrete foundations or piled into the ground, depending on the ground conditions of the site. Figure 3 shows PV panels in a typical Solar Park



Figure 3 – Typical Solar Park

Inverters will convert the low voltage DC electricity generated by the panels to low voltage AC electricity. Transformers will then increase the voltage of this electricity. The inverters and transformers will be housed in dedicated buildings on site, each approximately 8.5 m long by 2.5 m wide by 3 m tall. The project will be capable of exporting 9 MW of clean, renewable electricity.

A network of cables will connect the transformers to a set of switchgear, housed in a control building on site. The control building will be about 5 m long by 5 m wide and up to 4.5 m tall. From the control building electricity will be exported to the regional grid via a new underground cable to the existing substation located 1500m west of the proposed site. The design of this connection will be determined by Western Power Distribution (South Wales) (WPD), the local network operator.

Onsite access roads would not be extensive and are limited to tracks from the access points from the main road network to the inverters and transformers.

A permanent 2.5 m tall security fence will be installed, with access gates to allow access for occasional maintenance of the equipment.

The permanent Solar Park footprint will occupy a very small ground area, as the panels will be mounted above the ground on steel poles, with the lowest edge of the panels being approximately 1 m above the ground. Sheep or other small animals may graze under and between the rows of panels.

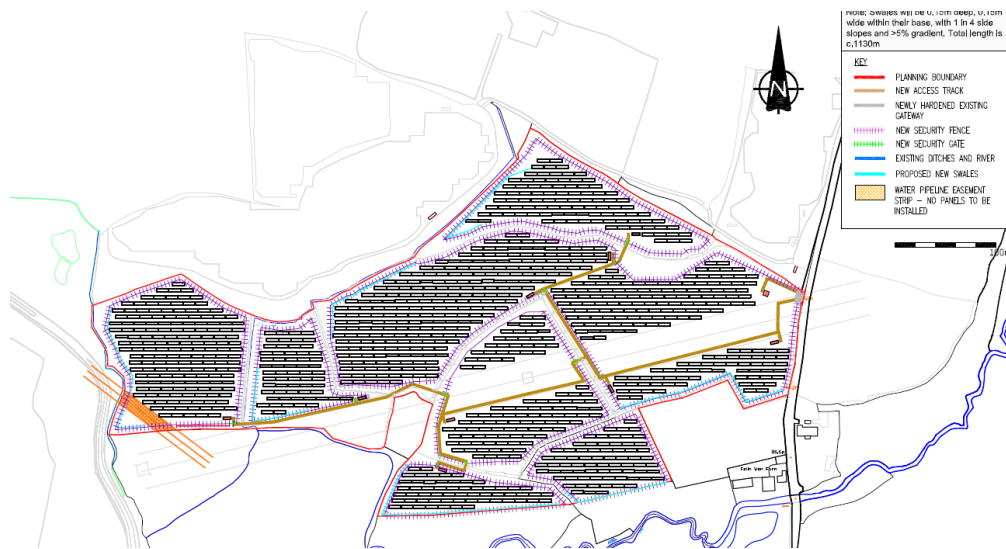


Figure 4 – Indicative Site Layout

The construction, operational and decommissioning phases of the project are discussed further below. The layout of the proposed development is shown in Figure 4.

Construction

Following receipt of the planning permission and award of construction contracts, it is anticipated that it could take as little as three months to construct the Solar Park.

The principal activities during the construction of the Solar Park include:

1. Constructing the limited site access road and site compound / laydown area (plus any other enabling works);
2. Excavating and constructing the inverter and transformer foundations / skid mounts and, if needed, PV module foundations;
3. Constructing and installing of the inverter and transformer, and installation of PV panel support structures;
4. Transporting and assembling the panel mounting systems;
5. Mounting the PV panels on the mounting systems;
6. Installing the electrical collection system (cables etc);
7. Commissioning and energising the Solar Park; and

8. Site re-instatement and any enhancement measures.

A temporary site compound would be constructed for the parking of construction vehicles and equipment, staff vehicles, and the storage of materials including panels, cables and other components.

After construction has been completed, the site compound would be restored as closely as possible to its original condition as would other areas of the site as appropriate.

A construction workforce of up to 50 personnel is expected. However, it is not expected that all workers would be on site at any one time. The peak workforce would be on site during the busiest construction period when multiple disciplines of contractors complete work simultaneously. The main turnkey contractor will be encouraged to award contractors to local firms who can provide services such as civil and electrical work.

Operation and Maintenance

The Solar Park is expected to have an operational life of about 40 years and would be unmanned during typical day to day operation. Its performance would be automatically monitored from a control system that would be off site. The site will be permanently monitored by CCTV cameras.

The site would be visited typically twice a month for routine visual inspections. As far as is practical, short term routine maintenance procedures would be undertaken during winter periods to minimise the impact on electricity generation. Maintenance / servicing would be similarly timed.

In the event of a fault, the modular design of solar panels allows them to be quickly replaced.

The electrical equipment (the inverters and transformers) will require annual visual inspections. This does not affect availability of the project. On a 3 yearly basis, testing and calibration of the equipment would require a short break in operation.

A sign would be located at the access point to site and would provide information about the installation and contact telephone numbers.

Decommissioning

Compared to other power generation technologies, Solar Parks can be easily and economically decommissioned and removed from site at the end of their economic life with the site returned to its original condition. There would be little or no trace that the Solar Park had existed following decommissioning.

There are several aspects of the decommissioning phase which may have environmental effects. The main activities will comprise:

- Removal of PV panels, inverter and associated equipment;
- Reuse / recycling / disposal of the above; and
- Removal of cable and ancillary structures.

Wessex Solar Energy would develop a decommissioning plan at the appropriate time with the necessary works being undertaken in accordance with a Working Practices Procedure. The details of the Working Practices Procedure would be agreed not less than 12 months prior to decommissioning.

The Planning Application

The project is the subject of a full planning application to City and County of Swansea Council who are the relevant planning authority for the development. The scope of the environmental studies undertaken has been previously agreed with the Council through a 'screening request' from Wessex Solar Energy.

The planning application comprises a number of documents including the following:

- Planning application forms and associated technical drawings;
- An Environmental Report, providing information on planning policy compliance, baseline environmental information and the predicted environmental impact of the development for key environmental aspects;
- A Design and Access Statement providing information on land take, appearance and access, amongst other aspects.

This ER is also available for public viewing at City and County of Swansea Council offices.

Environmental Considerations

The following provides a summary of the findings of the environmental studies undertaken for the proposed Solar Park.

Ecology

A detailed study of ecology on site has been undertaken by a suitably qualified ecologist to identify any ecologically sensitive areas of the site and the presence of any protected species. This was supplemented by a desk based search of ecological records held by the local wildlife trust and other such groups.

The investigation found that the site was of limited value for protected species. The study did however recommend some potential habitat enhancement schemes that will be taken forwards by Wessex Solar Energy to help improve the biodiversity of the site and area more generally.

Landscape and Visual Amenity

In order to gauge the landscape and visual effects of the proposed Solar Park a study has been undertaken. This has led to the identification of some key view points from which photographs have been taken to inform the assessment.

The investigations found that views of the site are significantly constrained by the surrounding topography and vegetation. It is considered that when hedgerows around the site have been allowed to grow to 3-4 metres and new vegetation planting has grown, views of the site from residential properties will be negligible.

Cultural Heritage

The site has been the subject of a desk based archaeological search and geophysical survey. This work concluded that the construction of the proposed solar park would not have a significant impact upon any archaeological resource.

Noise and Vibration

A noise study has been undertaken of the project. The nature of PV technology is such that during operation there would essentially be no noise. This study therefore focused primarily on the construction phase.

The noise predictions undertaken have shown that the project will not cause significant noise impacts during the 3 to 4 month construction phase. To ensure that this is the case Wessex Solar Energy has proposed set working hours (8 am to 6pm, Monday to Friday and 8am and 1pm Saturday) outside which work will not be undertaken without special permission from the Council.

Traffic and Infrastructure

The nature of the project is such that traffic movements will be primarily associated with the construction phase with just a few operational phase visits per year. At the peak of the 3 to 4 month construction phase perhaps 50 vehicles will access the site on a daily basis.

Hydrology, Hydrogeology and Geology

An assessment has been made of the nature of the geology, hydrology and hydrogeology in the area primarily to inform the project foundation design and identify any environmental risks that should be mitigated in the construction phase.

Wessex Solar Energy will ensure that drainage from the site will remain unpolluted during construction, operation and decommissioning.

Project Benefits

The proposed Solar Park will generate clean renewable energy without some of the significant landscape and other environmental impacts associated with some other forms of renewable energy.

The project, once operational will be capable of producing 9 MW of electricity at peak output with an annual electrical output of the order of 9,480 MWh. This is enough electricity to power up to 2,646 households annually.

Generation of electricity by the Solar Park will reduce the UK's reliance on fossil fuels by displacing generation from coal and gas fired power stations. In so doing it will reduce emissions of greenhouse gases like carbon dioxide and other pollutants such as sulphur dioxide and nitrogen dioxide which lead to soil acidification and acid rain.

On a regional basis the project will represent an investment of up to £6 m into the region.

Wessex Solar Energy will encourage the contractor who will construct the project to use locally sourced materials and locally based contractors as part of their proposals so as to maximise the benefit to the local economy.

Contact Details:

Wessex Solar Energy welcomes questions on our project from interested parties. We would appreciate these being directed to our Development Manager **Richard Wearmouth** who can be contacted at the following address: Wessex Solar Energy, Barmoor Farm, Morpeth, Northumberland, NE61 6LB or email: rww@wessexsolarenergy.co.uk