

# Questions and answers

**Contact:**

Jane Thompson and Rob Webbon  
Strategic Environment and Climate Change

☎ 01454 863870 / 01454 863468

✉ [sustainability@southglos.gov.uk](mailto:sustainability@southglos.gov.uk)

---

## Potential solar project at Leigh Farm in Pucklechurch

### Introduction

We are investigating the potential to build a 5MW ground mounted solar collection at Leigh Farm 1 Pucklechurch, a council owned property. This site has been identified as the best council owned site for solar and with the least number of constraints. The site is located in Pucklechurch Parish where the Parish Plan already includes an ambition for a renewable energy project in the area.

This project is expected to generate renewable electricity equal to that used by 935 homes (81% of all the homes in Pucklechurch), and will reduce carbon emissions, generate income for the council and the community. The surplus income would be used to support local services and to fund community projects. We have secured a grid connection offer and are currently investigating the suitability of the site and ownership options.

We would like to hear your views on the proposals before we decide to submit a planning application for this project. We hope the information that we have provided will help you understand the proposals. Please contact Rob Webbon or Jane Thompson, Environment and Climate Change Officers, if you have any further questions.

### Why do we want to do this?

South Gloucestershire Council's Climate Change Strategy was adopted in April 2013 and includes ambitious targets to reduce carbon emissions and generate energy from renewable sources. In the strategy we made a commitment to assess land suitable for renewable energy developments. This site has been identified as suitable for solar.

We want to develop this scheme to:

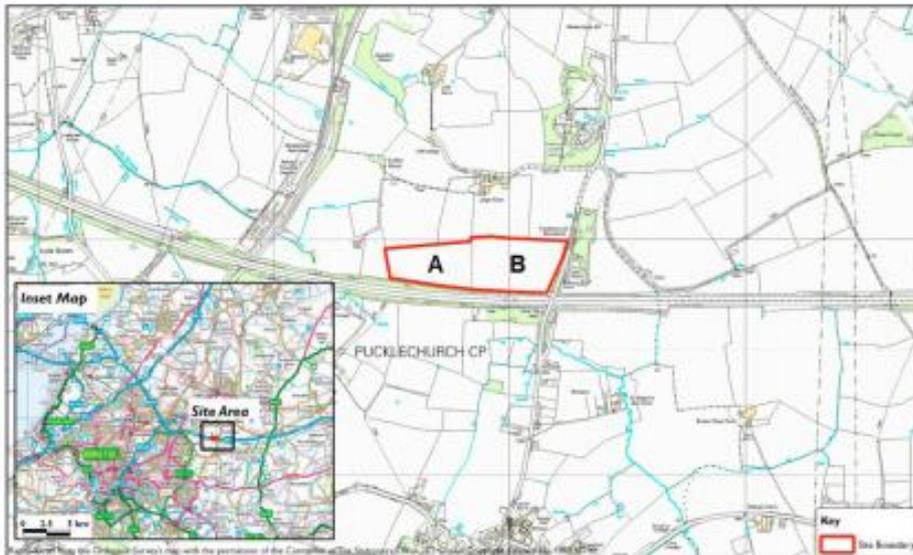
- Increase the generation of renewable energy
- Reduce carbon emissions

- Increase energy security
- Generate income for the council and the community

## Where do we want to do this?

This solar project will be located at Leigh Farm 1 in Pucklechurch across two fields located to the North of the M4 motorway adjacent to Westerleigh Road.

### Site Location Plan



## Why have we selected this site?

We have selected this site because the site faces south and has been identified as the best council owned site for solar with the least number of constraints. In addition, the Pucklechurch Parish Plan also includes the aim to develop a renewable energy project in the area.

## What is a ground mounted solar PV scheme?

These are banks of solar PV panels mounted on a structure fixed to the ground. The panels are connected to inverters and transformers that are connected to the local electricity distribution grid. In the UK, the panels are usually arranged facing south, and are tilted at an angle to maximise the energy collected from sunlight, usually 20 to 30 degrees.

## What is a PV panel?

The word Photovoltaic (PV) is derived from photo, which means light, and voltaic, which means electricity. PV cells convert sunlight into electricity. They are normally made of silicone, contain no moving parts and produce no emissions or noise in operation. A number of cells are joined together to form a PV panel, usually with a metal frame and glass surface to protect the cells. A panel is designed to absorb light and not to reflect it.

## Where would the panels be located?

Please see the site plan supplied within the Pucklechurch Solar Project summary document [www.southglos.gov.uk/solarpanelproject](http://www.southglos.gov.uk/solarpanelproject).

## What size would the scheme be?

The farm is large enough to accommodate 25MW of solar panels. However, the financial support available from Government, and the available grid connection, mean that we can only build a 5MW scheme on the farm. This would occupy 14 Hectares.

## Where will the scheme connect to the grid?

Cables will be taken from the farm to “plug into” the local electricity network at Wapley substation. The current plan is for these to be buried in the road (Westerleigh Road and B4465). We are investigating a cross-country route to save money and reduce the disruption caused by the work.

## The Council also owns Leigh Farm 2 as well, have you considered using these fields?

The land at Leigh Farm 2 faces in the wrong direction and slopes too steeply to allow us to build a solar scheme.

## Have you considered using the fields to the South of the motorway?

We have considered using those fields but have not secured a grid connection to serve those fields.

## How much energy will be generated?

The scheme will generate approximately 4400MWh (megawatt hours - a unit of electricity) per year. The “average” house in Pucklechurch uses 4.69MWh per year so this will meet the electrical needs of 935 houses. This amount of electricity would run 10,260 fridge-freezers for a year, or it would charge an i-phone continuously for 83,390 years.

## How does this compare to other local schemes?

This scheme would be approximately 1/3rd the size of the Says Court Farm scheme at Westerleigh, and approximately the same size as the scheme recently consented at Hinton.

## Where will the panels be seen from?

A formal landscape and visual impact assessment has been carried out and reported that impacts on people experiencing views of the landscape are varied depending on distance, orientation and elevation. In general, views locally towards the site are limited by intervening field boundary vegetation. The field to the west (field A on the site plan) is well hidden from most viewpoints because of the lie of the land and screening from the motorway embankment and trees. The field to the East (field B on the site plan) is more visible. See summary sheet for photos.

### ***Close up Views***

The site will be most visible from footpaths within the farm, from Westerleigh Road and the Leigh Farm houses, where existing screening is of limited influence. Motorists travelling from Pucklechurch to Westerleigh will get a glimpse of the site as they drive over the motorway bridge. New hedgerows and trees will provide some additional screening but the site will still be visible. Views from the motorway will be significantly reduced with new planting. A glint and glare assessment will be undertaken to determine if this will create any problems for motorists.

### ***View from Pucklechurch Village and surrounding footpaths***

From Pucklechurch and the surrounding footpaths and roads, south of the M4, views are generally well screened, and the inclusion of additional boundary planting will be of considerable benefit to the integration of the solar farm into the wider landscape.

### ***Distant View from Dyrham Hill Fort, Cotswold Escarpment***

The site will be visible in more distant views from selected locations along the Cotswold escarpment, that are not screened by trees, including Dyrham Park and Dyrham Fort. Here, the impact from new boundary planting would be more limited and the solar arrays would be a notable element as a small proportion of the overall view

## **Will there be a problem with glare?**

We do not anticipate a problem with glint or glare from the site, however we will commission an expert to carry out an assessment of this.

## **What screening and landscape enhancements will be provided?**

Existing field hedgerows would be retained, and strengthened by supplementary planting of native species, except where access between fields is required. New native hedgerows would be planted to reinforce the southern and eastern boundaries of the site to provide some shielding of the solar array from predominant views. A landscape management plan will be created to define the approach to reduce impacts upon sensitive viewpoints.

## **What is the agricultural land classification of the site?**

A recent survey has shown the site to be poor grade agricultural land equal to grade 4 classification. This deterioration from a previous grade 3 rating is expected to be as a result of motorway spoil deposited on the site during construction of the M4.

## **What about ecological impacts?**

A great crested newt survey has been conducted for a pond on the site and has found no evidence of these. Further ecological surveys will be carried out to identify any potential effects of the solar scheme on nature and to inform the site design and management plan.

## **Have archaeological and cultural heritage issue been taken into account?**

An archaeological and cultural heritage assessment will consider the potential effects on buried archaeological features on the site, and also visual effects on heritage assets around the site.

## **How would site construction be managed?**

A construction management plan will be written for the scheme and submitted to the Planning Authority for their sign-off before construction begins. This will consider all aspects of the construction such as working hours, traffic management, storage and removal of waste materials, etc.

## **How long will the scheme last?**

We will be applying for planning permission for a 25 year life. It is therefore considered to be a temporary project.

## What happens to the panels after 25 years?

After 25 years the solar array would be dismantled and the farmland restored to its present state. The solar panels and the steel frames that they are mounted on would be recycled, to minimise the impact of the project.

## How much will the scheme cost to build?

About £5million (based on 2015 costs of panels) plus the interest on any loans that are required to build it.

## What is the expected rate of return on the investment?

The rate of return is dependent on a number of factors including the cost of panels at time of construction, the level of subsidies at time of registration, sale price of electricity and cost of borrowing. However we anticipate a rate of return of at least 5% a year on the investment.

## Has the council developed any other ground mounted schemes?

We have recently obtained planning permission for two small ground-mounted solar projects (at Moorend and Badminton Road) which will together generate up to 830 MWh/year. The Badminton Road scheme will supply electricity directly to our offices. These will be built in 2015.

## Will the solar farm be eligible for Government support?

The solar farm would receive financial support through the Governments' Renewables Obligation's Certificates (ROCs). Under this scheme electricity generators must buy ROCs from renewables generators to offset a portion of the greenhouse gas emissions they generate. The ROCs scheme will be closing to new applicants in March 2017 so we would have to complete the project before then. The other support mechanism is the Feed in Tariff (FiT), however this scheme will not be viable under the FiT.

## Who will own and manage the project?

We are looking for the ownership model that brings the greatest level of public benefit. By public benefit we mean income to the council plus income to a community benefit fund. This will vary depending on:

***Cost of panels at time of construction***

***Level of subsidies at the time of registration of the scheme***

***Sale price for the electricity***

We are considering the following ownership options:

### Option 1 - The council develops and owns the scheme and makes a community benefit payment

With this option the funds for council investment would borrow money to build and own the scheme. Surplus income would be used to fund local services and an annual community benefit payment would be made to fund local projects.

## Option 2 - The council secures planning permission and leases the land for a community owned project

With this option the council would offer a local community energy enterprise the opportunity to own and run the project. The project would be financed through a community share offer and loans if needed. Investments can be from £50.00 up to £10,000 and rate of return on similar schemes is typically between 5 and 7%. Any surplus income generated will be re-invested in local community energy or other priority projects. The enterprise would need to be governed by local people and professionally administered.

### What is a community benefit payment?

An annual payment to a community benefit fund of at least £1000/MWh generated is usually made to the parish council for distribution to local community projects. Any surplus income from a community owned scheme after investors have been paid would be retained by the organisation for distribution to local community projects or reinvestment in future energy projects.

### Will I be able to buy electricity directly from the solar farm?

The electricity has to be sold to a registered energy company so it is not possible to buy electricity directly from the project but it may be possible for a local tariff to be agreed with the registered energy company. However there is no guarantee that this will be at a more favourable rate than from other providers.

### Will I be able to invest money in the solar farm?

You will be able to invest money in the scheme if it is owned by a community energy organisation. Investments can be from £50 up to £10,000 and rate of return on similar schemes is typically between 5 and 7%.

### When will you apply for planning permission?

We would like to submit a planning application in autumn this year with a view to seeing the project built and commissioned in 2016.

### Construction work is currently being carried out at Leigh Farm, does this have anything to do with the proposals?

The works in progress at Leigh Farm 1 are being undertaken by Highways. The road outside of Westerleigh Crematorium is prone to flooding. The existing drainage culvert across a field at Leigh Farm 1 that is supposed to take the water away from the road has collapsed. The cost of repairing the culvert would be prohibitive and therefore a new open ditch is being dug alongside the field boundary nearest to the Highway. This new ditch will hopefully alleviate Highway flooding in this area.