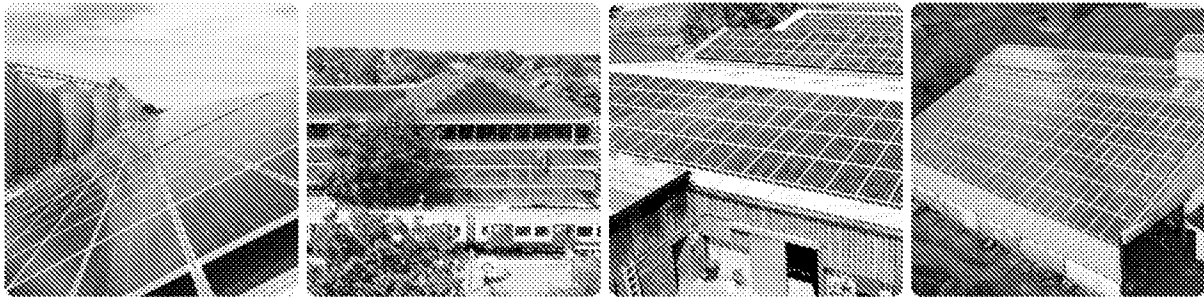


Design and Access Statement



100.00kWp

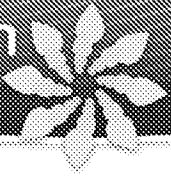
Bowley Farm Solar PV Ground Array

Prepared by

Chris Bignell

Solinium – Renewable Energy





DESIGN & ACCESS STATEMENT

Proposal for a Ground Mounted Solar PV Array

Clarkes Of Bowley
Bowley Farm
Bowley Lane
Chichester
West Sussex, PO20 1NB

1.0 Introduction

This Design and Access Statement has been prepared by Solinium Ltd and is submitted in support of a full planning application to Arun District Council for a 100.00kWp photovoltaic PV Installation within the curtilage of Clarkes of Bowleys premises at Bowley Farm. The document explains the thought process behind the design and indicates how through good design the scheme can be delivered in a sustainable manner ensuring social, economic and environmental considerations and objectives are fully met.

This document has been prepared in accordance with the requirements of *Guidance on Information Requirements and Validation* (Communities and Local Government, 2010) and the guidance set out in *Design and Access Statements: How to write, read and use them* (CABE, 2006).

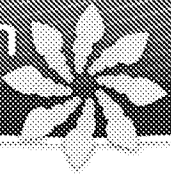
The Site and Selection Process

Solinium Ltd is based in High Wycombe, Buckinghamshire. It is a company specialising in turn-key solutions for both Domestic, and Commercial Customers, who's aim is to reduce their carbon omissions. Solinium evaluate each customer's specific requirements to ensure our developments meet our client's energy usage demands, whilst not causing detriment to the site, local area, or landscape as a whole.

The site lies to the South of Bowley Lane. The chosen site is comprised of approximately 0.27 hectares, is contained within the total area of the farm and is located to the South of the farm house. It was identified as being suitable for a solar array due to its lack of environmental or policy constraints, its availability (being owner occupied land not subject to tenancy or agricultural contract), its ease of access from the public highway and the availability of a suitable on-site connection.

Nature of the Solar Installation

The purpose of a solar array is to generate electricity from daylight using the photovoltaic (PV) process. The renewable electricity generated is used on site and less energy will be drawn from the national grid. Income is earned for the owner of the array through the Feed in Tariff (FIT), which provides payments for every unit of electricity generated with a supplementary payment for each unit fed into the grid.



Components of the Installation

The proposal for this site has the following components:

Solar arrays – Fixed solar PV panels, mounted on metal frames and set into the ground by direct piling or screw piling. The panels are non-reflective. They are arranged in east-west rows and are tilted southwards at approximately 20-30 degrees from the horizontal, with a maximum height of 2.3m to the top of the panel frame on level ground. The panels and frames can be completely removed when the site ceases operation.

Inverters – PV panels generate direct current (DC) electricity, which must be converted to usable alternating current (AC) power for the electricity distribution network. This is done by inverters which are attached to the panel mounting structure.

Construction

The total construction period is typically no more than 3 weeks including any pre-preparation of the site, assembly and erection of the photovoltaic arrays and installation of the inverters. The materials will be delivered direct to site and from Soliniums Head Office in Buckinghamshire.

Maintenance and Decommissioning

The solar array requires little maintenance, with activity limited to occasional visits to clean, check and test the installation, with personnel using small vehicles (4x4 or transit van type).

It is anticipated that the installation will be in operation for a minimum of 25 years. Planning permission is sought for this period. After 25 years PV panels will still work at 80% of their original capacity and so the array will remain in operation until the end of its viable economic life. Once this occurs the site will be decommissioned and will be restored back to the existing quality or better, with no lasting harm or structures that would compromise the site.

Climate Change

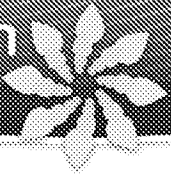
The proposed development will generate electricity from a renewable resource and thus responds directly to the threat of climate change. The West Sussex Local Flood Risk Management Strategy provides detail of potential flood levels, which determine the level at which components of the array will be installed.

2.0 Existing Site description and Site Context

The proposed application site is approximately 0.27 hectares and is undeveloped land within the boundary of a Bowley Farm, an arable farm site. (Please See APPENDIX 1 OS Site Location Plan and Appendix 2 Block Plan). The OS Grid centre point coordinates for the site: 488522, 099797.

The site is adjacent to Clarke of Bowleys existing arable farm land which is to the East, and directly to the North of a number of static caravans.

The site is North-West of Nyetimber, West Sussex, and is approximately 4km from Bognor Regis town centre. Our site is also approximately the same distance from Sidlesham, which is South-East from Bowley Farm.



The overall site of the proposed array is undulating, and in need of levelling prior to install. There are existing hedgerows to the North, and West of the proposed site, whilst the existing farm buildings to the North-East provide further screening from Bowley Lane itself.

3.0 Project Description

Solinium Ltd, on behalf of Clarkes of Bowley are proposing to develop a Solar PV installation with a peak output of 100.00kW. The proposed development will use renewable sources to generate electricity which will be predominantly used in the grain processing units, and offices of Bowley Farm, to achieve its carbon reduction and sustainability targets.

The principal elements of the proposed development are as follows:

The erection of fixed solar panels, mounted on metal frames and set into the ground by piling to a depth of approximately 1.5m. To achieve optimum solar gain the panels are laid out in east-west rows with a space of at least 4m between each row to avoid shading. Each individual panel is non-reflective and is orientated at between 20 and 30 degrees to the sun with a maximum height of approximately 3m from ground level to the top of the panel frame.

There is suitable access for light maintenance work.

The main elements and processes involved on site are described in this Design and Access Statement. This section should also be read in conjunction with the drawings and details that accompany this application and show the proposed layout of the panels and other components of the proposal.

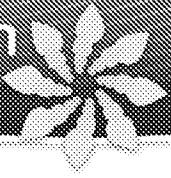
4.0 Planning Policy

Policy Context

Renewable energy is one of the key global topics, where there is a consensus at a world, European, and national level that efforts to reduce our reliance upon fossil fuels are of critical importance. This can be seen from international legislation and policy from the UN and IPCC, to numerous parts of national legislation, OFGEM reports, and National Planning Policies. International, European and national policy commit the UK to reducing its impact on climate change and increasing the supply of energy from renewable and low carbon sources. These commitments are reflected in existing and proposed national and regional policy and need to be translated into local policy and action.

Planning has a significant role to play in meeting these commitments by understanding the local potential for renewable and low carbon technologies, identifying suitable locations for renewable and low-carbon energy production and supporting infrastructure, and setting standards for delivering these kinds of new development.

England now has a requirement to reduce greenhouse gas emissions by at least 80% by 2050, relative to 1990 levels. The UK has legally binding target to supply 15% of all of the energy it uses from renewable sources by 2020. The UK Renewable Energy Strategy White Paper (July 2009) describes how the UK will meet this via a combination of renewable technologies and government incentives including the Feed in Tariff. More detail on national and local government renewable energy and planning policy and guidance is provided in the Planning and Sustainability Statement.



As a result, it is important that planning authorities acknowledge the national and international position in determining planning applications. The planning system is one of the key delivery points in delivering sustainable development, and should not be relying solely on often outdated policies to determine applications which have been demonstrated to bring positive outcomes to the reduction in carbon emissions and the reliance upon fossil fuels.

National Planning Policy Framework (March 2012)

In the NPPF it is noted that the purpose of the planning system is to achieve sustainable development. In the introductory pages of the NPPF it goes on to state that development that is sustainable should go ahead, without delay. The production of a sustainable form of electricity is at the heart of the proposed development.

Twelve Core planning principles are outlined in the NPPF, one of these addresses renewable energy specifically. Planning should *"Support the transition to a low carbon future in a changing climate...and encourage the reuse of existing resources...and encourage the use of renewable resources (for example, by the development of renewable energy)"*.

Section 10 of the NPPF, *'Meeting the challenge of climate change, flooding and coastal change'* is the key section of the NPPF as regards renewable energy. As stated in paragraph 93:

"Planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development."

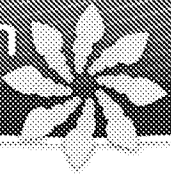
In the paragraphs which follow, the role of local planning authorities is discussed. It is noted that they should adopt proactive strategies to mitigate and adapt to climate change and to support the move to a low carbon future local planning authorities should plan for new development in locations and ways which reduce greenhouse gas emissions. Furthermore, it is noted in paragraph 98 that: *"When determining planning applications, local planning authorities should: Not require applications for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and approve the application if its impacts are (or can be made) acceptable..."*

In Section 3, *'Supporting a prosperous rural economy'*, it is noted that to promote a strong rural economy local and neighbourhood plans should *"Promote the development and diversification of agricultural and other land-based rural businesses..."*

The recently published NPPF is very supportive of renewable energy developments and should be acknowledged as a material consideration when assessing the planning application.

The use of renewable energy, in combination with improvements in energy efficiency of all new development, offers an opportunity for dealing with wider concerns over climate change and the emission of greenhouse gases in West Suffolk.

The need to conserve and protect the Earth's natural resources underlines the importance of ensuring future development is achieved within known biophysical limits. This now lies at the heart of international commitments on sustainable development and sustainability. These same principles also need to be applied within the context of West Suffolk, where large-scale developments are proposed.



Renewable energy is defined as energy that comes from: Active photovoltaic energy (PV);

This policy seeks to achieve greater efficiency in use of natural resources, minimise energy demand and increase the use of renewable resources.

REGIONAL POLICY

The Regional Plan policies promote better design and sustainable construction, and set out regional priorities for energy reduction, energy efficiency, low carbon energy generation and are underpinned by an 'energy hierarchy'.

The Regional Plan provides a steer towards the technologies that are appropriate in each regional Sub-area and sets out indicative renewable energy targets for different technologies... The Council will need to make provision for promoting and encouraging energy efficiency and renewable energy to contribute to the regional targets. Through the Partial Review of the Regional Plan, which is currently being undertaken, it is intended to set out Housing Market Area based carbon reduction targets and guidance on the most appropriate mix of technologies.

The District Council will grant planning permission for proposals to generate energy from renewable sources, subject to the proposals according with the other Core Strategy policies, national guidance and complying with the following criteria:-

The proposal can be connected efficiently to existing national grid infrastructure, unless it can be demonstrated that energy generation would be used on-site to meet the needs of a specific end user. The proposal should make provision for: the mitigation of the real emissions/impacts arising from the installation of the renewable energy generation the removal of the facilities and reinstatement of the site, should the facilities cease to be operational.

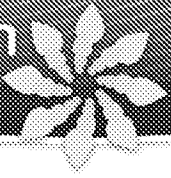
Policy Conclusions.

The NPPF requires Planning Authorities to make positive planning decisions for sustainable development, particularly renewable energy schemes that reduce the reliance on carbon based energy generation, and which do not have other adverse impacts.

It is clear from the policies outlined above that there is support for the development for all levels as it will produce a significant amount of renewable energy. This support is subject to various location-related requirements.

The location of the development has also been demonstrated to be acceptable. It will not have an unacceptable impact in terms of flooding.

The Arun District Council Core Strategy is in favour of renewable energy. Solar is particularly well positioned as impacts are less than other technologies and mitigation potential is very good within the landscape.



5.0 Evaluation

No planting is required around the site; there is mature vegetation surrounding the site to the North, and West. The boundary will be set back from the boundaries of the site, this leaves space on all four sides for wildlife and maintenance.

6.0 Proposal

The application is for a 100kWp photovoltaic solar array that would produce electrical energy sufficient for over 40 homes. The nature of such a proposal, the site selection process, and the suitability of the site for this use are described earlier in this document. The site access will be from Bowley Lane, the route to the proposed array will be along existing, and well established tracks.

The use of land in the countryside for the production of energy is consistent with tradition and practice going back many centuries. Since medieval times and earlier, woodland has been planted and managed to generate wood for fuel. In the present day, fuel is derived from arable crops such as maize and rapeseed, and other crops are grown as biomass fuel.

The UK imports both food and fuel and security of supply is a factor in relation to both. The use of land such as the site for energy production will contribute to the UK's energy security and to a reduction in its reliance on fossil fuels.

7.0 Site Access

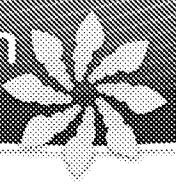
All deliveries for our proposed 100kW Ground Array will be made via Bowley Lane. Whilst this is a single track road, Bowley Farm has used this route for many years for grain collections. Our deliveries will be made using standard side loading articulated lorries, which are narrower in width than most grain collection lorries. There will be 2 goods deliveries consisting of Frame, and Solar PV Modules. These deliveries will be unloaded in the main Bowley Farm courtyard, and then transported to the area of installation by forklifts/telehandlers.

We did review utilising the entrance to the East of Bowley Farm, via Barfoods of Botley. Unfortunately this route crosses the Pagham Rife, and we feel this bridge would certainly not be suitable for articulated deliveries.

8.0 DAS Conclusions

The proposed installation will significantly contribute to the energy needs of Clarkes of Bowley. The array will be grid tied but it is expected that all of the energy produced will be used on site in the processing of Arable crops.

National planning policy is in favour of renewable energy so long as there is not an adverse effect on the proposed location and surroundings. The site is well screened and it is concluded from surveys that there would be no adverse effect on the environment, heritage or road network in the locality. In support of this Arun District Council has a similarly positive local policy section in relation to Renewable energy. Consideration arising from policy have been discussed across all parties and have influenced the design.



It is therefore considered that the proposed solar installation at Clarkes of Bowley, Bowley Lane should be recommended for approval by Arun District Council.