

**DESIGN AND ACCESS STATEMENT
MANOR FARM, SHRIPNEY**

for

BNRG RENEWABLES



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LAND AT MANOR FARM, SHRIPNEY
for
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May 2014**

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The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Royal Town Planning Institute's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.



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1.0 INTRODUCTION

- 1.1 This Design and Access Statement has been prepared on behalf of BNRG Renewables (hereafter 'the applicant') to support the submission of a planning application for the development of a solar park on Land at Manor Farm, Shripney.
- 1.2 Section 42 of the Planning & Compulsory Purchase Act 2004 requires a statement covering design concepts, principles and access issues to be submitted with an application for planning permission and listed building consent. It also inserts a new section 327A into the Town & Country Planning Act 1990 which prohibits, among other things, a Local Planning Authority from validating an application unless it is accompanied by a Design and Access Statement.
- 1.3 This Design and Access Statement describes the site and explains the background to the scheme, the design principles and concepts that have informed the development, and how access issues have been dealt with.
- 1.4 The Design and Access Statement should be read in conjunction with the accompanying Planning Statement and supporting technical reports which cover issues raised in more depth.

2.0 DESIGN

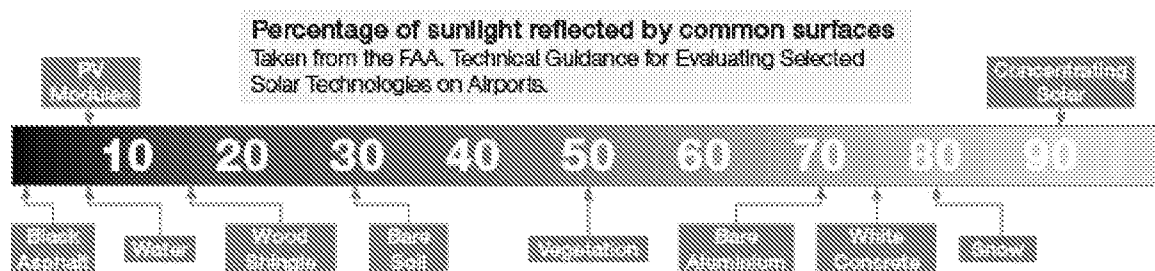
Use

- 2.1 The main use of the proposed development will be for the generation of electricity by solar photovoltaic (PV) panels. The site is expected to accommodate an installed capacity of approximately 21MW.
- 2.2 The panels will be connected by cabling carried in conduits to inverters to where the DC current generated by the PV modules is converted into AC current. The AC current is then fed into transformers where the voltage is changed (usually from 340 to 11,000 volts) for transmission of the energy with minimum losses to the grid connection point. The inverters and transformers will be housed in buildings (referred to as 'stations'), each with a footprint of approximately 30m².
- 2.3 There is also a requirement for two small substations to be placed on site. One will belong to the Distribution Network Operator (DNO) whilst the other will belong to the operator of the solar farm.
- 2.4 The point of connection will be into the substation to the south of the site. This connection will be provided via an underground cable and delivered by the local electricity supplier using its statutory powers.
- 2.5 The application proposes that the site will be used for solar energy production for a period of 30 years, after which it will be decommissioned in its 31st year, all the infrastructure removed, and the land returned to solely agricultural use.
- 2.6 It will be possible to graze the fields during the operational phase of this development due to the approximately 800 mm unobstructed height under the panels. The site therefore has the potential to retain an active agricultural use.

Layout

- 2.7 The solar panels will be angled and orientated in a landscape view to optimise their exposure to direct sunlight. They will be fixed i.e. they will not track the sun using motors.
- 2.8 The solar park will be set out in rows of module tables, lined from the east to west and orientated to the south in order to capture maximum solar energy. Sufficient space will be required between the rows to avoid one row of PV modules overshadowing the next.
- 2.9 The PV modules will be mounted on metal frames on posts which will be piled into the ground. The modules will be circa 2.4 m in height.
- 2.10 Additional PV equipment will include approximately 12 housing units for inverters/transformers and two small grid connection units located near the centre of the site.
- 2.11 Thermal imaging security cameras will be installed on circa 3 m masts discreetly located around the periphery of the site.

- 2.12 All the boundary hedgerows and trees will be retained. Perimeter fencing of circa 2.4m height and comprising deer netting to blend in with the surrounding landscape, will be erected around the perimeter of the array, on the inside of the boundary hedgerows. The purpose of the fence is to protect the array from theft, vandalism or damage. The security fence will be off-set from existing hedgerows by some 8 m with the panels offset internally from the fence by approximately 4m to allow for operational maintenance access. Where drainage ditches are present, a maintenance gap of at least 8m will be maintained between the external security fence and ditch.
- 2.13 PV panels absorb sunlight and the glass is coated with translucent coating materials to improve light transmittance into the glass. Thus panels appear to have a dull sheen and do not reflect light as strong glint or glare.
- 2.14 Studies into the likely impacts from glare on aviation have shown that glare from a photovoltaic installation is less than that from a similar sized water body, such as a lake.



Source: Federal Aviation Administration

- 2.15 Glint is a more intense, but intermittent, direct reflection of the sun from reflective surfaces, which can occur on rare occasions when several environmental conditions coincide. The sun has to be at the right height in the sky (seasonal) and at the right angle (time of day) and there must be no cloud obscuring the sun. Assuming that there is no cloud cover, these circumstances would only result in glint impacts on each receptor for a short period of time each day and for a few days twice a year. With the added constraint of cloudy weather, and other variables such as the slight differences in the pitch of panels and undulations in topography, it is almost impossible to predict these impacts. However, the PV panels and the frames are all designed with non-reflective surfaces and so any glint impacts would be minimal.

Scale

- 2.16 The proposed solar park will be approximately 50 hectares in area.
- 2.17 The two substations will have a combined footprint of approximately 10m x 10m.

Landscaping

- 2.18 Landscape mitigation will be delivered by retention and management of the existing boundary vegetation, where hedgerows are present, to a winter height of 3m. A new 10 metre wide band of trees is proposed along approximately 2/3 of the eastern boundary.

- 2.19 A new mixed native hedgerow interspersed with tree planting will be planted and cut to a winter height of 3m. This proposed hedgerow will link the proposed 10 metre band of trees and existing boundary vegetation along the southern section of the eastern boundary. On the eastern and northern boundary, gaps in the existing hedgerows are to be planted with 1.5m wide mixed native hedgerow managed to a winter cut height of 3m.
- 2.20 A new mixed native hedgerow interspersed with tree planting will be planted and cut to a winter height of 3m along the western boundary of the site. An 8 metre buffer zone between the security fence and the site boundary edge will protect existing mature trees and water ditches that are an important habitat for water voles.

3.0 ACCESS

Vehicular and Transport Links

- 3.1 Specific details relating to this can be found in the accompanying Transport Statement.
- 3.2 The site location at Manor Farm is to the west of Shripney Lane. It is bounded by Shripney Lane to the south and open fields to the north, east and west.
- 3.3 Access will be divided between construction, operational and decommissioning phases.

The Construction Phase

- 3.4 It is anticipated that the construction period will take place over a period of approximately 3-4 months. During the construction phase, vehicular access to the site will be taken from Shripney Lane via the existing access to the farm. This will be upgraded as required to a standard suitable for HGV movements.
- 3.5 Construction vehicles associated with the development proposal will route from the A29 (which is denoted as a Local Lorry Route on the WSCC Advisory Lorry Route Map) into Shripney Lane then turn right into Manor Farm, when travelling from the north. If travelling from the south/west vehicles will route via the A259 and then the A29 which is denoted as a Strategic Lorry Route. The proposed routes are detailed in the Transport Statement.
- 3.6 Construction vehicles travelling from the north will park in the layby on the eastern side of the A29 to the north of Victoria Gardens, to contact the site to ensure they can gain access to the site and also to reduce the likelihood of conflict with an opposing HGV on Shripney Lane. Those travelling from the south/west will park in the layby on the eastern side of the A259 to the west of Colworth, to contact the site before proceeding.
- 3.7 It is anticipated that the majority of site personnel vehicles will undertake the same route to access the site.

Parking Arrangements during Construction Phase

Car

- 3.8 The proposed scheme will provide suitable on-site car parking spaces for construction staff, to ensure that no overspill parking occurs on the public highway. In addition, construction staff will be encouraged to car share with colleagues.

Heavy Goods Vehicles

- 3.9 The level of HGV parking will be based on the operational requirements of the proposal. As such it is expected that two spaces will be provided within the site compound. A swept path analysis of HGV's accessing the site has been undertaken (see Construction Traffic Management Plan). This demonstrates that there is sufficient space for vehicles to enter and exit the site in forward gear and to safely manoeuvre within the site.

The Operational Phase

- 3.10 The trip attraction of the site during the operational phase will be very low and the access will not affect the operation of the local highway network.

The Decommissioning Phase

- 3.11 The decommissioning of the Solar Farm will be expected to generate a similar number of trips as the construction phase. The traffic associated with the decommissioning will be discussed with West Sussex County Council prior to it taking place, and appropriate measures will be agreed as necessary at that time.
- 3.12 The decommissioning phase is expected to take half of the construction time and will consist of the exact opposite construction sequence: starting with disconnecting the plant from the grid, removing the substations, inverters, opening of trenches to remove DC and / or AC cables, disconnecting all solar modules, and dismantling the modules and supporting structure.