



## **The development of large-scale Solar PV Arrays in South Somerset - Informal guidance**

This document is provided as informal guidance for both developers proposing a PV installation, and South Somerset District Council Planning staff determining the application. It has not been formally endorsed or adopted by the authority.

### **1. Introduction**

South Somerset District has recently begun to receive proposals for large PV arrays, due to the relatively high levels of incident solar energy available in the southwest of England, and the recent introduction of enhanced Government subsidy - the feed-in tariff - to encourage the installation of renewable generation facilities of up to 5MW output. A 5MW solar PV array will require approximately 15ha of open land on which ground-mounted photovoltaic PV panels are installed, to enable the conversion of solar energy into electricity, which in turn is exported to the electricity network via a local substation. The current level of subsidy applies to schemes that become operational before 1 April 2012, and with subsequent financial support likely to be reduced, the submission of a high number of applications is anticipated within a relatively short time-scale. Hence the following document provides outline guidance for potential solar farm development, and sets out the level of detail a formal application is expected to include.

### **2. Planning process**

#### **2.1 Pre-application discussion**

Potential developers are encouraged to engage in dialogue with the district planning authority before submitting detailed proposals. Pre-application enquiries should indicate potential PV array sites in plan form, and outline the likely scale of development, its height, and method of enclosure. The authority undertakes to provide an initial response to specific site enquiries, to indicate any sensitivities associated with the site, and if requested, to provide a screening opinion. .

#### **2.2 Environmental Impact Assessment**

Large-scale Solar PV arrays are not expressly listed in the EIA Regulations. However, schedule 2, section 3 of the regulations specifies that any industrial energy installation producing electricity, steam and hot water, which exceeds 0.5 hectares could potentially be EIA development. Additionally, with solar PV developments likely to be sited in rural areas, and typically on previously uncultivated land, then development listed in EIA Circular 02/99, Annex A, section A2 (such as greenhouses, farm buildings etc.) of more than 5 hectares may also possibly require EIA. As such development could potentially have a significant effect on the environment, developers are advised to seek a Regulation 5 Screening Opinion of the Planning Authority at the initial stage of the planning process.

## **2.3 EIA Screening**

The proposal shall be assessed against the selection criteria in Schedule 3 of the EIA Regulations to enable a screening opinion. Generally, EIA is likely to be needed for Schedule 2 developments if the solar PV development is in a particularly environmentally sensitive or vulnerable location. Specifically, it will be necessary to judge whether the likely effects on the environment of that development will be significant, relative to local ecology; visual impact; and landscape character, along with any possible cumulative effects with existing or planned development.

## **2.4 The Planning application**

Only detailed planning applications will be validated. Sufficiently detailed information should accompany the planning application to allow the LPA to fully assess any potential impact to the site and its surrounds during construction, operation and decommissioning of a solar development. Any development must be temporary and enable full restoration of the site to its original state once the installation is decommissioned. Supporting information should include but not be limited to those items listed Appendix 1.

## **2.5 Planning fees**

There is no national guidance on the fee category for solar PV installations. SSDC's Development Management team considers that such applications fall within Category 5 of the Town and Country Planning (Fees for Applications and Deemed Applications) Amendment (England) Regulations 2008. This category, for the erection, alteration or replacement of plant or machinery, imposes a fee of £335 for each 0.1ha up to 5ha. Where the site exceeds 5ha the fee would be £16,565, plus an additional £100 for each additional 0.1ha, subject to a maximum total of £250,000. A 15ha solar PV park (the average size) would therefore attract a planning fee of £16,565 (for 5ha) + £100 for each additional 0.1ha = (£10,000 for 10 ha) to give a total of £26,565.

Both the planning (red-line) boundary and application fee should relate to the site area. This area should reflect the natural site boundaries, unless the array and its enclosing fence is distant from the boundaries (e.g; exceeding 50 metres, or 25% field width). In such instances, the planning application boundary can extend around the fenced array only, though must include access, ancillary works and inverter building(s). The 'blue' line should always include the site's field boundaries, and any area where landscape/ecology mitigation measures are being proposed.

## **3. Site selection**

### **3.1 Preferred sites**

Large-scale solar PV arrays should avoid areas that are characterised by a distinct lack of development form, and should ideally be guided toward previously developed/contaminated land; industrial land and its margins; and adjacent major transport corridors. Any potential 'greenfield' PV site should seek to express a relationship with existing development. Solar PV arrays should generally avoid landscapes designated for their natural beauty or historic interest, and sites of acknowledged/recognised ecological and archaeological importance.

### **3.2 Agricultural land**

Land classified as the best and most versatile agricultural land (grades 1, 2 and 3a) should be avoided for PV arrays unless the developer can make an over-riding justification. (Note – generally agricultural land within grade 3 in South Somerset has not been surveyed to differentiate between grades 3a and 3b). If the site selected is on land grade 1, 2 or 3a, then the developer must explain why the development needs to be located on the site, advise why adjacent suitable options may have been discounted, and assess the impact on the viability of the farm unit.

### **3.3 Landscape considerations**

The development of solar PV arrays within the South Somerset landscape has the potential to result in significant impacts upon the landscape. Applications shall demonstrate that such impacts have been considered, and mitigated.

The PV proposal shall aim to complement the character of the local landscape, particularly its scale and pattern, and should be located within land areas that equate to typical field/plot sizes, and are suited to the uniformity of a PV array. Ideally, the array should be set within well-hedged field boundaries, or other landscape features that provide containment. The removal of existing trees and hedgerows within and abounding the site shall not be permitted.

To avoid adverse visual impact, arrays should be sited on relatively level ground, and avoid sloping upper hillside locations, to reduce their visual profile. There should be minimal overlooking from sensitive public vantage points, and locations where the array would be seen as a dominant element within the local landscape setting should be avoided.

The planning application should be accompanied by a detailed landscape and visual impact assessment (L&VIA). The L&VIA shall be consistent with the guidelines issued by the Landscape Institute, and Institute of Environmental Management and Assessment (as revised 2002).

### **3.4 Biodiversity considerations**

The development of PV arrays could have implications for habitat loss or fragmentation, and for displacement of species, dependent upon the ecological character of the site, and its sensitivity to change. Developers are advised to avoid areas of ecological importance or sensitivity; and will be expected to maximise the ecological potential offered by their site, by enhancing habitat potential whilst ensuring there is no adverse impact upon protected species.

An appropriate ecology survey should be submitted with all planning applications. The survey should identify local biodiversity networks in order to avoid restricting access and movement to native wildlife, and include suggestions to mitigate habitat impact.

### **3.5 Other potential constraints**

Generally, historic, cultural and landscape-sensitive assets should be avoided.

Below-ground archaeology should not be compromised by PV installation, and where potential archaeological interest is identified, the impact of the development on the site should be evaluated.

The potential for cumulative impact of PV sites arising from consents given in any one area of the district, should be avoided. Similarly, the local planning authority does not support the prospect of a regular (all-pervading) spread of PV arrays across the whole of the district.

## **4. Site detail**

### **4.1 Panel details**

The scale and specification of the PV panels will be required. The extent of the array, and its angle of repose should be specified, along with a maximum height, and the parameters of any 'tracking' element, including its range of height variation. The potential for PV panels, frames and supports to have a combined reflective quality should be evaluated through a glint and glare assessment. This assessment needs to consider the likely reflective capacity of all of the materials used in the construction of the solar farm, with particular reference to the face of the PV panel, and the likely lines of reflection relative to the sun's trajectory.

### **4.2 Ground works and anchoring**

Site levelling and ground works should be kept to a minimum. Any site levelling works necessary to facilitate the development of a solar PV array should be discussed at the pre-application stage, and detailed within any planning application. Frames should be pile driven or screw anchored and not concrete-based, and capable of easy removal, allowing the ground to be fully restored. Solar PV facilities that are developed on agricultural ground should be 'reversible', allowing the site to be easily restored to agriculture. Hence intrusive groundworks, such as trenching and foundations, should be minimised and the use of concrete avoided. In windy areas the stability of the installation will need to be considered.

### **4.3 Security and fencing**

Fencing is likely to be a requirement of solar array proposals, primarily to enable the developer to insure the site. Fencing must not obstruct public rights of way, nor protected species' migration routes.

Applicants are advised wherever possible to minimise the use and height of security fencing, and 'standard' security fencing solutions should be avoided. Fencing that has minimal visual impact in terms of colouration and 'see-through' capacity should be utilised, whilst existing features such as copses, hedges and other natural landscape features, shall be retained to screen security fencing, supplemented by additional native planting where 'gappy'. The use of security lighting should be kept to an absolute minimum, and should utilise a passive infra-red (PIR) technology, designed and installed in a manner that minimises glare and light pollution.

Permanent lighting will not be permitted.

Planning applications should contain full details and specifications of all security and lighting installations in order to allow an accurate landscape/visual assessment of the proposal to be made.

Where pole-mounted CCTV facilities are proposed, their location should be carefully considered to minimise visual/landscape impact.

#### **4.4 Access and inverter housing**

Access details should be submitted, and aim to utilise existing tracks where a hard surfaced access is necessary. The installation of additional access tracks should be kept to an absolute minimum, and will not be acceptable between rows of solar panels. Generally, service vehicles should be capable of servicing these facilities without the need to construct access tracks.

Inverter buildings, and any other associated building proposals, should be unobtrusively sited within the site, with material tones and colours designed to reflect landscape context.

#### **4.5 Grounds and site maintenance**

In most instances, the ground beneath solar panels is capable of remaining in agricultural use. Existing pasture cover should be maintained, whilst if the land is currently arable, applicants are advised to grass-seed the site. The land will require management, and the preferred option is that sheep grazing or similar should be enabled. If the grass is to be mown, then the potential for habitat gain, through wildflower-seeding, should be considered.

#### **4.6 Grid connection**

Application proposals should provide a broad indication of the route of connectivity to the electrical grid. The nature and extent of that connection shall be clearly indicated on plan. Such connectivity should avoid areas of high landscape, ecological or archaeological sensitivity, and not be extensive or visually intrusive. Connection to the grid may cause an accumulation of overhead wiring, if this occurs in sensitive areas, the cumulative impact will need to be assessed.

### **5. Appendix 1: Planning application and EIA submission requirements**

## **Appendix 1**

### **PV array applications;**

### **Planning application and EIA submission requirements**

Irrespective of whether the development falls within EIA regulations or not, the Local Planning Authority considers the following items to be necessary for submission with either a planning application or as part of an Environmental Statement:

#### **a) Design and layout -**

- Plan - Site Area (ha) to include extent of array, inverter buildings, fence line, etc
- Location plan - surrounding features, field boundaries, including trees and hedgerows, and topographical information
- Specification of panels, details of mounting structure including frame height, materials and base size.
- Programme of site preparation, construction, operation and restoration
- Access proposals for construction, maintenance and decommissioning
- Excavation/levelling details and soil removal estimates
- Presence of any existing utilities, underground cables, pylons, etc and impact during construction
- Specification and design of any associated roads, hardstanding or storage buildings, temporary and permanent
- Specification of any inverter buildings, sub-stations, control facilities and grid connection
- Specification of any additional security and lighting features.

#### **b) Assessments and mitigation -**

- Justification of location
- Assessment of agricultural land
- Landscape/Visual Impact Assessment (to include PV glint and glare)
- Landscape enhancement and mitigation proposal, including a 25 year site-management plan
- Assessment of Cumulative Impact
- Ecology survey and assessment, and biodiversity enhancement proposals.
- Transport Assessment to include construction, operation, maintenance and decommission schedule and predicted vehicle movements during all stages of the proposal.
- Flood Risk Assessment (while the site may not fall within a Flood Zone 2 or 3, the surface water treatment needs to be considered carefully given the potential for proposed buildings and hardstanding to be provided within the site)
- Geology statement
- Investigation into the potential presence of features of archaeological interest or cultural heritage

The extent of survey and assessment material should reflect the extent and sensitivity of the receiver site.

#### **c) Additional Requirements**

- Lifetime generation capacity
- Maintenance and Inspection Schedule
- Decommissioning Schedule
- Details of Electricity Generating Capacity
- Details of Grid Connection
- Confirmation from the Distribution Network Operator that the required capacity is available at the selected site and identification of point of connection
- Insurance details relative to security requirements
- A statement of community engagement, and the identification of any proposed wider community gains

## **Environmental Impact Assessment**

If the Local Planning Authority considers the proposal to fall under Schedule 2 of the EIA regulations an Environmental Statement needs to be prepared so that it can be considered with a planning application. The Environmental Statement needs to cover the requirements above as well as the following:

### **1. Description of the development incorporating:**

- The proposed development
- The purpose of the development
- Relevant plans showing the site location and area involved with the development
- Survey, analysis and design of the proposed buildings/structure with floor plans and elevations
- Solar panel design and specification, method of construction / installation
- Reasonable estimates of quantity and type of traffic, which will be generated through construction and operation

### **2. Site Description**

- Description of the main reasons for the site selection and any alternatives in site design or layout which have been considered
- Area of proposed land which the panels will occupy, clearly described and indicated on a map or diagram
- Illustrated description of the land use of the surrounding area
- Description of the policies plans and designations which are relevant to the proposal

### **3. Impacts and their significance**

The statement must assess the impact of the proposal, and how significant its impact, including short, medium and long-term effects, permanent and temporary effects, and positive as well as negative effects. The following factors should all be considered within the Environmental Statement:

- Fauna
- Flora
- Soil
- Water
- Air
- Climatic factors
- Material assets e.g. architectural and archaeological heritage

- Landscape
- Population
- Inter-relationship between the above

Some of these factors will not be impacted on by the development; if this is the case then a short explanation of why it is not relevant is required.

#### **4. Mitigation Measures -**

Mitigation of the effects that have been identified needs to be covered within the Environmental Statement. The most suitable format may be to focus on one issue at a time, discussing the effect; its significance; and its mitigation. For example a wildlife survey will identify what the impacts of the development are on wildlife, then go on to discuss the significance of the impact, and then propose mitigation measures, finishing with a conclusion. This should be done for each issue.

#### **5. Conclusion of Impacts -**

This can be included with each report/assessment of the area under examination.

#### **6. Alternatives**

- Demonstrate that other sites have been considered, and reasons for why other sites have been dismissed/why this site is most appropriate
- Report on any alternatives within the scheme that have been considered and dismissed, for example: different accesses; location of buildings within the site, etc.

#### **7. Methods**

- How the development will be implemented, including site preparation, drainage, maintenance, timescale for implementation, phasing of work.

#### **8. Difficulties**

- An indication of any difficulties encountered through technical deficiencies or lack of know-how encountered in compiling the information required in the Environmental Statement

#### **9. Finally -**

An Environmental Statement needs to be accompanied by a non-technical summary of the information provided above. The non-technical summary needs to contain:

- Purpose and nature of the project
- An area summary
- A brief description of information presented in the Environmental Statement, detailing key issues relating to environmental elements and the final determination of impact significance
- Conclusions

For further guidance the formal requirements on the content of environmental statements are set out in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 1999.