

Renewable and Low Carbon Energy Generation in North Somerset

Supplementary Planning Document



June 2013

Solar Photovoltaic (PV) arrays guidance note: draft for consultation

Please note: This guidance **does not apply to domestic installations** of solar photovoltaic (PV) panels. The majority of roof mounted and domestic stand-alone systems are permitted development. This means that these systems will not require planning permission. Detail of the criteria can be found in the [Introduction](#) section.

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Consultation process

North Somerset Council is preparing a Renewable and Low Carbon Energy Generation Supplementary Planning Document (SPD) to provide guidance on large scale energy installations such as solar arrays and wind turbines. This document comprises the first part of that SPD and relates to solar photovoltaic arrays. This is published in the form of a guidance note and will be subject to consultation. Further parts of the proposed SPD will be similarly published and consulted upon before a draft SPD is finalised and approved for consultation on the document as a whole.

While responses are welcomed from all individuals, groups and organisations, the subject matter means that this is likely to be of specific interest to renewable energy developers, statutory consultees for renewable energy applications, and other organisations and/or individuals who may have an interest in renewable energy developments, both at the specific site/application level and more widely.

We will notify all consultees via email at the start of the consultation process. We will also post notification of the consultation on the North Somerset Council website www.n-somerset.gov.uk

There will be an opportunity to comment on this draft document for a four week period. If you would like to provide comments by email, please send these to planning.policy@n-somerset.gov.uk

Feedback will be given on all comments received (with discussions entered into as necessary) so that everyone knows how their comments have been addressed and how they will influence decision-making. We will keep everyone who has made comments up to date to let them know how the document is progressing.

1. Background

Renewable energy policy

1.1 The EU Renewable Energy directive suggests that, if the UK is to meet its renewable energy target of 15% from renewable sources by 2020, all local authorities need to engage in identifying and approving appropriate renewable energy development.

1.2 The Government is committed to increasing the proportion of energy we use from renewable sources and development of renewable energy resources on a commercial scale is a crucial element in meeting the Government's commitments on reducing emissions and combating climate change. The Climate Change Act is the UK's legally binding commitment to reduce carbon dioxide emissions by 80% by 2050, from a 1990 baseline. The Government expects each authority to contribute to meeting the targets and reducing overall demand for energy.

1.3 The National Planning Policy Framework (NPPF) sets out policy to support the development of renewable and low carbon energy, by stating that local planning authorities should recognise the responsibility on all communities to contribute to energy generation from these sources. It states that local authorities should:

- have a positive strategy to promote energy from renewable and low carbon sources;
- design policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;
- support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and identify opportunities where development can draw its energy supply from decentralised supply systems and for co-locating potential heat customers and suppliers.

1.4 North Somerset Council is committed to reducing carbon emissions and supporting renewable and low carbon forms of energy generation. We are responsible for determining applications for onshore renewable energy schemes up to 50MW generation capacity. The planning Inspectorate will determine applications for installations with a generation capacity greater than the 50MW threshold. To appreciate the potential scale involved, a 5MW solar PV array if located on open land would require approximately 15ha of land to ground-mount the panels.

1.5 This is the first part to the Renewable and Low Carbon Energy Generation Supplementary Planning Document (SPD) and will provide guidance for both developers proposing a Solar Photovoltaic (PV) array installation, and North

Somerset Council in determining any application received relating to solar PV array developments. Once adopted, the SPD will have statutory weight and be a material consideration in the determination of planning applications.

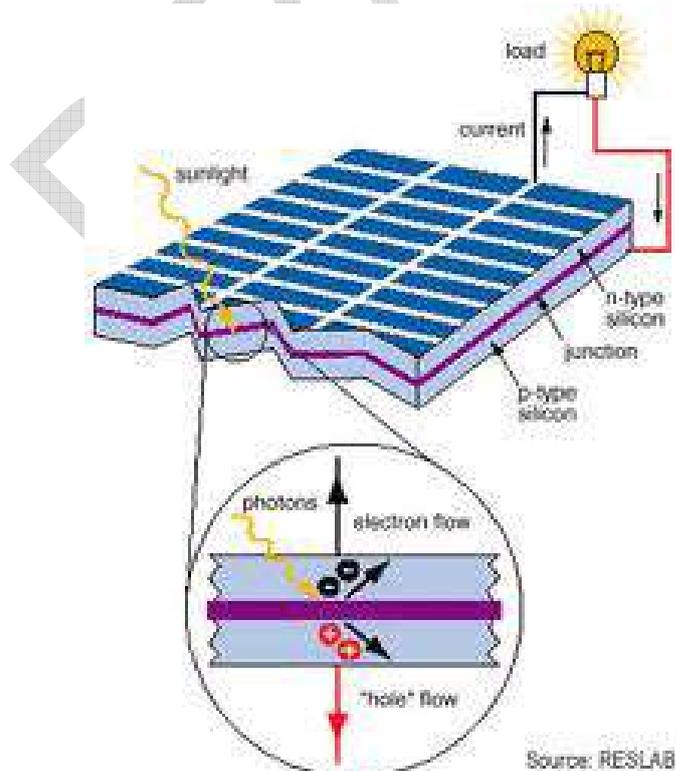
1.6 This Supplementary Planning Document (SPD) provides more detailed guidance to support [Policy CS1: Addressing climate change and carbon reduction](#) and [Policy CS2: Delivering sustainable design and construction](#) of the North Somerset Core Strategy. The overall aim of this guidance is to provide policy to facilitate renewable and low carbon energy development, while ensuring that adverse impacts are addressed satisfactorily. The specific considerations we require to be taken into consideration are set out in the emerging [Sites and Policies DPD: Policy DM2](#).

1.7 It is recognised that any renewable and low carbon energy development must be appropriately sited in North Somerset, and this Supplementary Planning Document provides information to help applicants select and design proposals that can be appropriately sited to the locality.

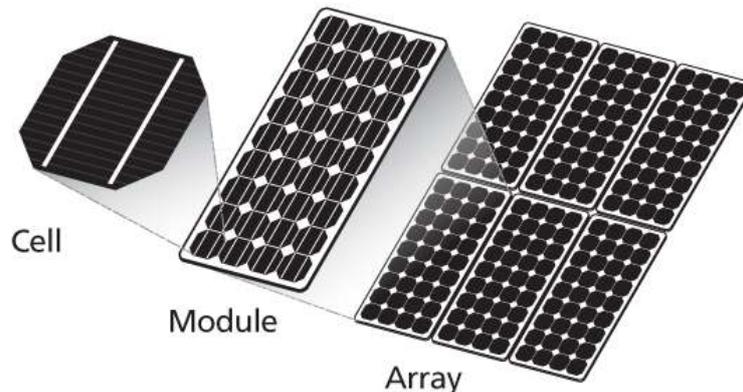
2. Introduction

What is solar photovoltaic (PV) technology?

2.1 Photovoltaic cells consist of layers of semi-conducting material, usually silicon and work by converting solar radiation into direct current electricity. When light shines on the cell, it creates an electric field across the layers. The stronger the sunshine, the more electricity is produced.



2.2 Solar cells are grouped together to form solar panels (or modules) and in turn, a number solar panels are grouped together to form solar PV arrays. Solar cells need to be orientated as close to south facing as possible and need to be clear of overshadowing from buildings or trees. The solar energy that is converted into electricity will need to be exported to the electricity network.



2.3 Solar PV arrays are normally installed in rows, with spaces between rows of at least twice the height of the panels to avoid panels over-shading each other. The arrays are typically mounted on frames or 'tables' that are anchored to the ground. The panels are ideally oriented south in UK latitudes, at an angle 30 - 45 degrees from horizontal to maximise exposure to direct sunlight. The optimum angle of the panels for electricity generation is dependant upon the orientation of the array.

Is planning permission required?

2.4 Most domestic, roof mounted solar PV systems are now permitted development (so don't require planning permission). This is as long as they don't protrude more than 200mm beyond the plane of the wall or the roof slope. Domestic stand-alone systems are also permitted unless they are:

- more than 4 metres in height
- installed less than 5 metres away from any boundary
- above 9 metres square
- within the curtilage of listed buildings
- in a conservation area: must not be located on a wall fronting a highway or be nearer to the highway than the dwellinghouse or the block of flats. No more than one stand alone solar panel within the curtilage will be permitted.

2.5 Non-domestic systems will need to apply for planning permission.

Why do we need this guidance?

2.6 North Somerset has received and expects to receive further proposals for Solar Photovoltaic (PV) arrays. This is due both to the relatively high levels of solar energy potential in the south west of England compared with other regions

in the UK (see [Figure 1](#)), coupled with the existence of the Government's [Feed-in-Tariff](#) (FiT) subsidy for the installation of renewable generation facilities of up to 5MW output and [Renewables Obligation Certificates](#) (ROC), which Ofgem issue to electricity generators relating to the amount of eligible renewable electricity they generate.

2.7 Whilst we are supportive of the installation of renewable and low carbon energy generation technologies, we recognise that this is a relatively new technology and due to their scale, can have a variety of impacts. We therefore need to display appropriate control in their application and are setting out clear parameters for the development of solar PV arrays within this document.

3. Site selection

Preferred sites

3.1 Solar PV arrays should avoid areas that are undeveloped and should therefore be located on previously developed/ contaminated and industrial land and its margins. Solar PV arrays should, where practical be mounted on top of existing roofs, or integrated into new roofs and buildings. Any potential 'greenfield' PV site should seek to complement existing development, for example grazed land should still be able to be grazed once the development is completed. Solar PV arrays should generally avoid landscapes designated for their natural beauty or historic interest and sites of recognised ecological and archaeological importance.



3.2 The potential for cumulative impact of solar PV sites arising from consents given in any one area should be avoided.

3.3 Key significant impacts of solar PV development on the environment are generally considered to include the effects on the following receptors:

- Agricultural land

- Landscape and visual impacts
- Biodiversity
- The historic environment
- Flood risk

Agricultural land

3.4 In accordance with the National Planning Policy Framework (NPPF), where there is significant development of agricultural land, this should seek to use poorer quality land in preference to that of higher quality (safeguarding the long term potential of best and most versatile agricultural land (grades 1, 2 and 3a) and conserving soil resources). Where higher graded agricultural are selected, a developer must explain why the development needs to be located on the site and why other suitable options may have been discounted. It is noted however, that paragraph 112 of the NPPF does guide planning authorities to take account of the economic and other benefits of the best and most versatile agricultural land and recognition is given to the need to support diversification of agricultural land use that helps to sustain an agricultural enterprise. Therefore, while development on lower grade land is preferred, we will consider the merits of the proposed development in the context of wider sustainability criteria. The grading of land in North Somerset can be viewed on the [Agricultural Land Classification](#) map.

Landscape and visual considerations

3.5 The development of solar PV arrays within North Somerset has the potential to result in significant impacts upon the landscape. Any solar PV proposal should 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 sizes, and are suited to the uniformity of a solar PV array. Ideally, the array should be set within well-hedged field boundaries, or other landscape features that provide containment.

3.6 The planning application should be accompanied by a landscape and visual impact assessment, to be consistent with the [guidelines](#) issued by the Landscape Institute, and Institute of Environmental Management and Assessment (as revised 2002). This should include detail of the potential for solar PV panels, frames and supports to have a combined reflective quality, evaluated through a glint and glare assessment.

3.7 To avoid adverse visual impact, arrays should be sited on relatively level ground and avoid sloping upper hillside locations, to reduce their visual profile. Sites should be screened from view where possible, either by the existing landscape or by planting hedges or vegetation. It should not be possible to obtain extensive views of selected sites from sensitive public vantage points and locations where the array would be seen as a dominant element within the local landscape.

3.8 Where any nationally protected landscape is concerned, landscape and visual impacts are likely to be the most significant environmental effects of a

solar PV development. The character and quality, along with views to and from the Mendip Hills AONB will be of particular relevance in North Somerset. Elements of solar PV developments that individually or collectively, may result in adverse impacts on the AONB include:

- The geometric, alien colouration and non-agricultural character of development covering large areas;
- Typically occupying south-facing exposed sites (therefore highly visible) to take best advantage of the sun's energy;
- Views from North Somerset Mendips will be to the North, where these south facing sites are likely to be highly visible

3.9 It is as much for the views offered within the AONB as the views out from the Mendip Hills that the area is valued. Unsympathetic, incongruous development in these landscapes can act as a visual detractor; having an adverse impact on the character of the AONB. These factors should therefore be taken into consideration with any proposed development.

3.10 Any development **must be temporary** and enable full restoration of the site to its original state once the installation is decommissioned. Any removal of existing vegetative field boundaries will not be permitted.

3.11 The ['North Somerset Landscape Character Assessment Supplementary Planning Document'](#) provides detailed information on landscape designations. Applications should demonstrate that landscape impacts have been considered and mitigated.

Biodiversity considerations

3.12 The predominantly rural aspect throughout North Somerset with its varying geology and topography has resulted in a landscape of great nature conservation value which is important in both a national and international context. The development of solar 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, especially those areas with local; national or international designations.

3.13 In North Somerset there are four areas of Special Areas of Conservation (SACs); two National Nature Reserves which are part of the Gordano Valley and Leigh Woods; the Mendip Hills Area of Outstanding Natural Beauty (AONB), 38 Sites of Special Scientific Interest (SSSI), two hundred Local Wildlife Sites and over eighty Local geological Sites and local nature reserves. You can view these site designations on a North Somerset [interactive map](#).

3.14 Developers will be expected to maximise the ecological potential offered by their site, whilst ensuring there is no adverse impact upon protected species. An appropriate ecological impact 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.

3.15 Solar PV developments can offer a range of opportunities to encourage and enhance biological diversity, these can include:

- establishment and management of wildflower strips between panels and around field headlands;
- habitat enhancement for a diverse range of flora and fauna, for example by adapting built structures to encourage use by nesting, roosting or hibernating species such as bats;
- low density grazing by sheep/geese;
- management for grass ley/crops between the rows of panels

Such enhancements should be considered with any potential development.



3.16 More information on biodiversity in North Somerset can be found in the [North Somerset Biodiversity Action plan 'Action for Nature.'](#) Further general advice on the assessment of sites for solar parks can be found in the technical information note produced by Natural England: ['solar parks: maximising environmental benefits'](#). The guidance offers advice on integrating a range of environmental benefits into solar PV development.

The historic environment

3.17 Generally historic, cultural and landscape-sensitive assets should be avoided. These include conservation areas, listed buildings, and scheduled monuments, areas of archaeological importance and registered and other historic parks and gardens.

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

Flood Risk Assessment

3.19 The impact of a solar park site on flood risk should be considered in the Environmental Report accompanying the planning application. The surface water treatment needs to be considered carefully, given the development of infrastructure associated with sites, including inverter housings, access tracks and hard standing, which may affect surface water runoff rates and volumes. Any electrical equipment may need to be raised off the ground to avoid potential flooding.

4. Site detail

4.1 It is important that solar PV developments are sympathetic to the existing environment and minimal disruption must take place during the construction and operational phases of any development.

4.2 We expect all developments to include at least a five metre buffer strip between hedges and solar panels to be provided, for access, hedge management and consideration to biodiversity impacts.

Panel details

4.3 The scale and specification of the solar PV panels will be required when assessing applications. 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 (for those panels that change angle to follow the path of the sun), including its range of height variation.

4.4 Solar panels are designed to absorb, not reflect, irradiation. However, the sensitivities associated with glint and glare, including the landscape/visual impact and the potential impact on aircraft safety, should not be underestimated. Particular consideration should be given to the glint/glare impact on properties that are higher up a slope than the solar development, as the angles involved mean that these are most likely to experience any glint/glare effects created. Therefore the potential for the solar 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 array, with particular reference to the face of the solar PV panel, and the likely lines of reflection relative to the sun's trajectory.

Ground works and anchoring

4.5 Site levelling and groundworks 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.

4.6 Solar PV facilities that are developed on agricultural ground must be 'reversible' allowing the site to be easily restored to agriculture. Hence intrusive ground work's, such as trenching and foundations should be minimised and the

use of concrete avoided. Frames should be pile driven or screw anchored and not concrete-based, and capable of easy removal, allowing the ground to be fully restored. In windy areas the stability of the installation will need to be considered.

Security and fencing

4.7 Fencing is likely to be required with solar array proposals, primarily to enable the developer to insure the site. Fencing must not obstruct public rights of way, nor restrict wildlife corridors. Wildlife access crossing points should be included wherever possible.

4.8 Applicants are advised wherever possible to minimise the use and height of security fencing. Any fencing should have minimal visual impact in terms of colouration and 'see-through' capacity should be utilised. Existing features such as copses, hedges and other natural landscape features should be retained to screen security fencing, supplemented by additional native planting. 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.

4.9 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.

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

Access and inverter housing

4.11 Access details should be submitted and should 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.

4.12 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. A statement to justify any building and its size will be required, especially in the Green Belt and within the Mendip Hills Area of Outstanding Natural Beauty.

Grounds and site maintenance

4.13 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.

Grid connection

4.14 Application proposals should provide a broad indication of the route of connectivity to the electrical grid. The nature and extent of that connection should be clearly indicated on the site 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.

4.15 The capacity of the grid may be a consideration in an application; we recommend you contact Western Power Distribution to discuss your proposal at an early stage.

5. Consultation/ Community Engagement

5.1 The Council is keen to ensure that all types of group are able to make their views known effectively and good opportunities are provided for this. As a matter of good practice the community should be engaged before a planning application is submitted.

5.2 Effective dialogue about solar PV proposals between developers, the local authority, stakeholders, local communities, interest groups and statutory consultees is essential to tease out issues of concern and discuss options for mitigation and provision of any benefits to the local area. The scale of public engagement required will vary according to the scale of the proposal and the controversy any proposal is likely to generate. Prospective developers of commercial scale schemes need to be aware of the time required for effective engagement and allow sufficient time in their project planning to allow for responses.

5.3 The council will provide feedback on all comments received (with discussions entered into as necessary) so that everyone knows how their comments have been addressed and how they will influence decision-making in determining applications. We will keep everyone who has made comments up to date to let them know how the document is progressing. Our consultation requirements/ procedure are set out in our [Statement of Community Involvement](#).

Community Schemes

5.4 There is an opportunity for communities to bring forward their own renewable and low carbon energy generating proposals. Community supported generation can extend the benefits of renewable energy to households in the form of cheaper energy, revenue streams, employment with the additional benefit of profits generated by the investment being retained within the local community. Many community groups are already working on energy related activities, pursuing behaviour change, demand reduction and energy efficiency measures in addition to promoting renewable energy.

5.5 North Somerset Council is keen to assist community renewable energy and demand reduction schemes and will consider favourably those applications that have a community enterprise model as an integral aspect within the development, subject to these meeting all other criteria as set out in this guidance. This is in line with the National Planning Policy Framework (NPPF) guidelines, which recommends ‘support for community-led initiatives for renewable and low carbon energy’

Community Ownership Models

a) Co-operative Share Offers

5.6 A developer offers the project for co-operative investment at the construction stage. The offer could be for the entire project, a share of the entire project, or for one or more panels in a larger project. Investors receive a rate of return over the project’s life, plus the return of their capital at the end of the project. This model only benefits those able to invest.

b) Social Enterprise Models

5.7 The project is community initiated and the community are involved in the development process. If it is a small project it may be owned and managed by the community. A larger project is likely to be managed and owned by a specialist social enterprise company for the benefit of the community. Profits must be allocated to a stated social cause such a carbon reduction and sustainability initiatives. The project can be funded by grants, co-operative share offer, commercial loans or a combination of these.

6. The Planning application

Pre-application discussions

6.1 Potential developers are encouraged to engage in dialogue with North Somerset Council before submitting detailed proposals. We also advise that you engage with the local community at an early stage. Pre-application enquiries should indicate potential the solar PV array sites in plan form, and outline the likely scale of development, its height, size, method of enclosure and any accompanying structures. The authority undertakes to provide an initial response to specific site enquiries, to indicate any sensitivity associated with the site and if requested, to provide an opinion on whether an environmental screening report is required. Details of this can be found on our [website](#).

Planning Performance Agreement (PPA)

6.2 A Planning Performance Agreement is an agreement between a developer and local planning authority that will identify key milestones and timescales for the delivery of a planning decision. It provides greater certainty and transparency to the development of scheme proposals, the planning application assessment and decision making. An applicant can request a PPA with us if this is felt necessary for a development proposal.

Environmental Impact Assessment (EIA)

6.3 An Environmental Impact Assessment (EIA) is a systematic process used to identify, predict and evaluate the environmental effects of a proposed project. In the context of solar PV developments, it is a formal process that aims to protect land and semi-natural areas from permanent damage, and to guard against possible negative environmental effects from solar PV development.

6.4 Solar PV arrays are not listed as schedule 1 developments in the 2011 EIA Regulations; therefore don't automatically require an EIA. However, Schedule 2; Section 3 of the regulations under the energy industry heading specifies that any industrial energy installation producing electricity, steam and hot water, which exceeds 0.5 hectares (around 60 panels) could potentially be EIA development. As such development could potentially have a significant effect on the environment; developers are advised to seek a **Screening Opinion** (to inform whether an EIA is required) from us at the initial stage of the planning process.

6.5 The proposal will be assessed against the selection criteria in Schedule 3 of the EIA Regulations to enable a screening opinion to be issued. This will include the potential impact on environmental receptors including local ecology, archaeology, water resources, landscape character and visual impacts. The potential for cumulative effects with any existing or approved development (both other solar PV schemes and other types of development) will also be considered. 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 and likely to be required for larger scale developments.

6.6 If the council considers the proposal to fall under Schedule 2 of the 2011 EIA Regulations, an **Environmental Statement** (ES) needs to be prepared so that it can be considered with a planning application. Detail of the level of detail required within the ES is provided in the [Appendix](#).

Submitting a full Planning Application

6.7 Sufficiently detailed information should accompany the planning application to allow us to fully assess any potential impact to the site and its surroundings during construction, operation and decommissioning of a solar development.

6.8 Planning applications for all renewable technology developments should give details of the energy generation potential, stated as:

- the installed capacity (in MW or kW),
- the 'capacity factor' (the ratio of its actual output over a period of time, to its potential output if it were possible for it to operate at full nameplate capacity indefinitely)
- the estimated annual production (MWh p.a.)

6.9 It would be helpful to provide an indication of the number of residential properties electricity equivalent that will be provided by the development, to allow non-experts to understand the potential impact of the scheme. Such a

statement should be indicative only and the assumptions used to calculate this figure should be included.

6.10 Solar PV development should be regarded as a temporary use of land, and as such, all structures associated with the site must be removed once the site is decommissioned. Planning permission will therefore only be granted under the condition of an agreed timescale for decommissioning and with land restoration to its original use. And permission will be conditional to a further agreement that where a development ceases to be operational in advance of the consented period, the site must be returned as soon as practicable to original use.

6.11 It is vital to ensure that solar PV panels are disposed of responsibly at the decommissioning phase of the development. An agreement on disposal will be a condition of any permission granted by us. It should be noted that from 2014, solar PV panels will be included in the scope of the recast Waste Electronic and Electrical Equipment (WEEE) Regulations 2006. This means that the solar PV provider is required to register with the scheme to ensure that constituents of panels are reused, recycled and recovered after their operational lifetime. The purpose of this is to reduce the quantity of material that is sent to landfill and to ensure that what gets separately collected is dealt with properly. More details on the [WEEE Directive](#) can be found on the Environment Agency website.

6.12 The information we require to be submitted with any application is explained in more detail on our [website](#). Supporting information should include but not be limited to those items listed in the [Appendix](#) below.

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Appendix

Planning application and EIA submission requirements

Irrespective of whether the development falls within EIA regulations or not, North Somerset Council 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, hard standing 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
- Ecological survey and assessment, and biodiversity enhancement proposals.
- Transport Assessment to include construction, operation and maintenance and decommission schedule and predicted vehicle movements during all stages of the proposal.
- Flood Risk Assessment – the surface water treatment needs to be considered carefully given the potential for proposed buildings and hard standing to be provided within the site
- 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 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 (EIA)

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
- The area of proposed land which the panels will occupy, clearly described and indicated on a map or diagram
- An 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 environmental 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 must 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 the reasons 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 and location of buildings within the site etc.

7. Methods

How the development will be implemented, including site preparation, drainage, maintenance, timescale for implementation and the 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. Summary

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 2011 EIA Regulations.

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Figure 1. Solar irradiation in England showing solar electricity potential

**Global irradiation and solar electricity potential
Optimally-inclined photovoltaic modules**

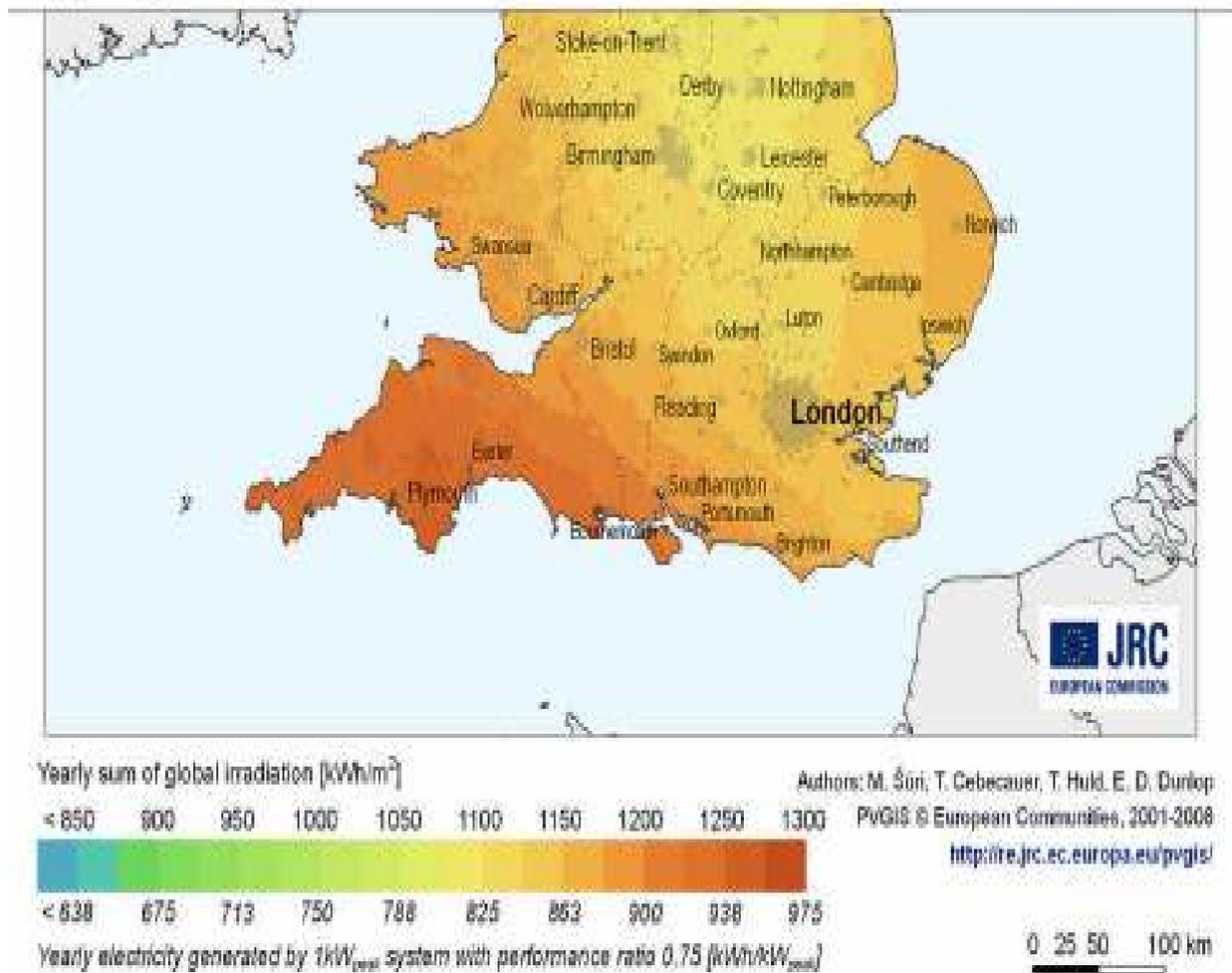
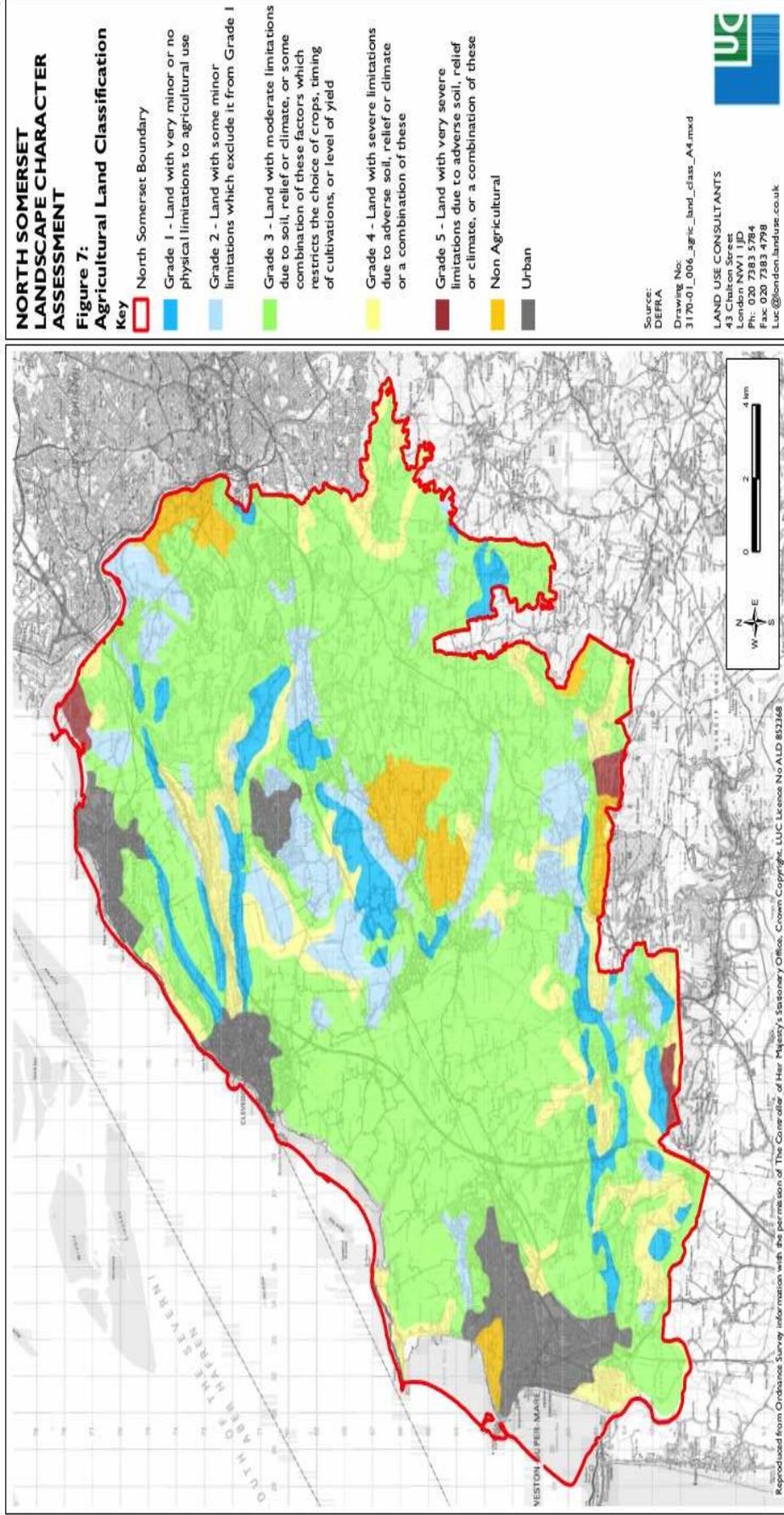


Figure 2. Agricultural Land Classification Map for North Somerset



**Renewable and Low Carbon Energy Generation:
Solar PV arrays**



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Sources of further information:

North Somerset Council Statement of community involvement:

<http://www.n-somerset.gov.uk/Environment/Planning+policy/Statement+of+Community+Involvement/>

North Somerset Council Consultation Draft Sites and Policies Development Plan Document

<https://www.n-somerset.gov.uk/NR/rdonlyres/630E5911-18EF-4DE8-9EA8-50AEF22BB153/0/22678SitesandPoliciesPlanWEB.pdf>

The North Somerset Biodiversity Action plan 'Action for Nature'

http://www.n-somerset.gov.uk/NR/rdonlyres/C35887AE-0664-4215-B4B3-B35CC2589D0B/0/strategy_BiodiversityActionPlan.pdf

Natural England: TIN 101 'solar parks: maximising environmental benefits'.

http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CDkQFjAA&url=http%3A%2F%2Fpublications.naturalengland.org.uk%2Ffile%2F102004&ei=ZAYSUafcHZCGhQfnvYH4AQ&usq=AFQjCNHkOWiLuwaTfTqBUeOI4_7qkGQqJg&sig2=x0E4laSV7kNHKOnLTF7uCQ

North Somerset Council proposals map: <http://map.n-somerset.gov.uk/LocalPlan.html>

North Somerset Landscape Character Assessment Supplementary Planning Document: http://www.n-somerset.gov.uk/NR/rdonlyres/E7CF98B2-AAF8-42A2-B6AF-0C263780371E/0/document_NSLandscapeCharacterAssess.pdf

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North Somerset Council Validation list for new development proposals:

<http://www.n-somerset.gov.uk/Environment/planning/doineedpermission/checklist.htm>

The North Somerset Core Strategy:

http://www.n-somerset.gov.uk/downloads/LDF_Core_Strategy.pdf

Feed in Tariff (Gov.uk website): <https://www.gov.uk/feed-in-tariffs/overview>

Renewables Obligation Certificates (Gov.uk website):

<https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro>

Guidelines for Landscape and Visual Impact Assessment: Landscape Institute, and Institute of Environmental Management and Assessment (as revised 2002).
<http://www.persona.uk.com/a5dunstable/deposit-docs/DD051-DD075/DD-061.pdf>

Environment Agency guide to the WEEE directive:
<http://www.environment-agency.gov.uk/business/topics/waste/139283.aspx>

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