Renewable Energy Planning Guidance Note 2

The Development of Large Scale (>50kW) Solar Arrays
With thanks to Cornwall Council and Ashford Borough Council for permission to use their original documents and with thanks to Burden Bros Contractors for permission to use photographs of Old Rides Farm solar development on the Isle of Sheppey.

Front cover photograph: Old Rides Farm solar development, the Isle of Sheppey
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The Development of Large Scale (>50kW) Solar PV Arrays in Swale Borough

This guidance document has been prepared to assist all parties involved in the renewable energy development process. The status of this document is that it has been approved by the Council and will guide decision makers when determining applications.

Introduction

This guidance note aims to provide planning advice in respect of solar photo voltaic (PV) installations with a capacity in excess of 50kW. Planning advice in respect of solar PV installations with a capacity of less than 50kW is provided within a sister document 'The Development of Domestic and Medium Scale Solar PV arrays up to 50kW and Solar Thermal', published by Swale Borough Council.

This guidance note will be regularly reviewed and updated and can be viewed on our website at [www.swale.gov.uk/local-planning-guidance](http://www.swale.gov.uk/local-planning-guidance/)

We hope that you find this planning guidance useful but if you have any queries please do not hesitate to contact the Planning Policy team at [planningpolicy@swale.gov.uk](mailto:planningpolicy@swale.gov.uk) or ring 01795 417850.

We continuously seek to improve the quality of the advice and guidance that we offer and we would be happy to receive comments, suggestions, or images which may improve this guidance document.

Solar PV in the UK

The [map](#), right, shows the global irradiation and solar electricity potential for the UK. The greatest irradiation is within the south of England.

Large, grid-connected solar PV power plants

Large, centralised solar PV power systems, mostly at the multi-megawatt scale, have been built to supply power for local or regional electricity grids in a number of countries including Germany, Switzerland, Italy and now in the UK.
Feed in Tariff and Renewables Obligation

The Feed in Tariff (FiT) provides developers with a financial subsidy towards solar PV. The tariff for solar PV is index linked and is currently guaranteed for 20 years. The Renewables Obligation (RO) is designed to encourage generation of renewable sources of electricity and this scheme may be appropriate for large solar developments, although the government intends to reduce the size of eligible schemes. See Ofgem’s website for details www.ofgem.gov.uk/environmental-programmes/renewables-obligation-ro

Government Guidance

The National Planning Policy Framework confirms the government’s commitment to sustainable development with one of the core planning principles being to

“support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);”

Further detailed guidance is available in Planning Practice Guidance - Renewable and low carbon energy published by the DCLG in March 2014. Paragraph 013 identifies particular factors that Swale Borough Council will need to consider when determining applications for large scale solar farms as:

- encouraging the effective use of land by focussing large scale solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;
- where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays.
- that solar farms are normally temporary structures and planning conditions can be used to ensure that the installations are removed when no longer in use and the land is restored to its previous use;
- the proposal’s visual impact, the effect on landscape of glint and glare and on neighbouring uses and aircraft safety;
- the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun;
- the need for, and impact of, security measures such as lights and fencing;
- the care that should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large scale solar farms on such assets. Depending on their scale, design and prominence, a large scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset;
- the potential to mitigate landscape and visual impacts through, for example, screening with native hedges;
the energy generating potential, which can vary for a number of reasons including, latitude and aspect.

Paragraph 022 relates to wind turbines, but is also relevant to the cumulative impact of solar arrays:

- Cumulative landscape impacts and cumulative visual impacts are best considered separately. The cumulative landscape impacts are the effects of a proposed development on the fabric, character and quality of the landscape; it is concerned with the degree to which a proposed renewable energy development will become a significant or defining characteristic of the landscape.

- Cumulative visual impacts concern the degree to which proposed renewable energy development will become a feature in particular views (or sequences of views), and the impact this has upon the people experiencing those views. Cumulative visual impacts may arise where two or more of the same type of renewable energy development will be visible from the same point, or will be visible shortly after each other along the same journey. Hence, it should not be assumed that, just because no other sites will be visible from the proposed development site, the proposal will not create any cumulative impacts.

This Guidance note provides more information for potential developers and explains the approach to handling applications that Swale Borough Council will take.

**Planning Application considerations**

**a) Pre-Application Discussions**

Potential applicants are strongly encouraged to enter into pre-application discussions with the Council. Developers should contact Swale Borough Council Development Management at an early stage to discuss proposals including whether an Environment Statement is likely to be required in support of a planning application as well as which statutory consultees, parish councils and other bodies should be involved in the development of the scheme.

**b) Environmental Impact Assessment (EIA)**

Environmental Impact Assessment (EIA) helps to ensure that an authority giving development consent for a project makes its decision in the full knowledge of any likely significant environmental effects on the environment. Large scale solar PV arrays are not expressly listed in Schedule 2 to the EIA Regulations 2011, however it is quite possible such developments could have a likely significant effect on the environment. The National Planning Policy Guidance provides guidance on Environmental Impact Assessment and should be referenced by applicants [planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment/](http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment/).

**c) Screening**

As a starting point the proposal should be assessed against the selection criteria in Schedule 3 of the EIA Regulations in order to establish whether or not an Environmental Statement is
required. In general, EIA is likely to be needed for Schedule 2 developments if the solar PV development is in a particularly environmentally sensitive or vulnerable location.

In each case it will be necessary to judge whether the likely effects on the environment of the development will be significant in that particular location. In judging whether the effects of a development are likely to be significant it is necessary to have regard, amongst other things, to the potential impact of the development on visual amenity and landscape character and how this will be affected by the installation of a solar farm development, and also the possible cumulative effect with any existing or approved development. This should include situations where there is more than one application for solar PV development which should be considered together. Any views expressed by consultees should be taken into account. Advice should be sought from consultees where there is any doubt about the significance of a development’s likely effects on a ‘sensitive area’ as defined in the EIA Regulations.

**d) Full Planning Application**

The Local Planning Authority will expect applications to be for full, rather than outline, planning permission.

**e) Planning Application Fee**

The planning application fee for a solar PV installation is considered to 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, currently 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 facility (the average size of a 5 MW system) would therefore attract a planning application fee of; £16,565 (for 5ha) + £100 for each additional 0.1ha = (£10,000), giving a total of £26,565.

The planning application boundary, and planning application fee, relates to the site area. If the solar PV panels are close to a field boundary and there is an existing or proposed fence the planning application area should reflect these field boundaries. If the solar PV panels are some way away from the field boundaries (e.g. >50m) where a separate fence is proposed the planning application boundary should extend around the proposed solar PV panels with a separate planning application area extending around the fenced area. In such instances it would be unreasonable for the application area (and planning application fee) to include relatively large tracts of field where no development is proposed. Where no fence is proposed and solar PV panels are positioned in the middle of a field well away from the field boundaries the planning application boundary should be drawn around the proposed array and any immediate ancillary works e.g. access tracks. It is for the applicant to ensure that all proposed development is included within the boundary of the planning application.

As with all such applications, a planning application will not be registered until the correct planning application fee has been received by Swale Borough Council.
f) Site Levelling Works

Consideration should be given to the existing site contours. If any site levelling works are proposed to facilitate the development of a solar PV array the extent of these levelling works should be discussed at the pre-application stage and detailed within any planning application.

g) Development in Relation to Current Land Use

Ideally large scale solar PV arrays should be directed towards previously developed land / brownfield sites, contaminated land or industrial land. There are relatively few sites of appropriate status and size in Swale Borough. Large scale solar PV arrays should avoid landscapes designated for their natural beauty and sites of acknowledged/recognised ecological/archaeological importance. It is therefore often likely that such development will look to land currently in agricultural use.

The development of a 1.4MW solar PV farm on land adjacent to the Hendra Holiday Park, Newquay will greatly assist in meeting the electricity demand of this facility. Images courtesy of Hendra Holiday Park.
h) Assessment of the Impact upon Agricultural Land

The National Planning Policy Framework indicates that

“Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality.”

As outlined earlier in the section on Government Guidance, Planning Practice Guidance encourages, amongst other things, solar farms on previously developed and non-agricultural land and where a proposal does involve agricultural land that it has been shown to be necessary and poorer quality land has been used in preference to higher quality land. The presence of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) will therefore be a significant issue in the determination of applications to be taken into account alongside other material planning considerations.

Developers should note that, with regard to development on agricultural land, the search area for appropriate sites should not necessarily be confined to land in the control of the applicant, or to land within the borough, and rather should be determined in consultation with the Local Planning Authority.

The following steps should be undertaken by the developer when considering locating a large scale solar photovoltaic development on agricultural land. If a planning application is subsequently submitted it should be accompanied by the relevant information detailed in the chart below.
Swale Borough Council's decision making steps for agricultural land classification

Identify agricultural land classification/s for the proposed development site and submit information to demonstrate this with the planning application.

(Readily available maps do not identify whether grade 3 land is 3a or 3b. If the site is grade 3, it should be specifically assessed to establish whether the land meets the criteria for grade 3a or 3b.)

<table>
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<tr>
<th>If grade 1 and 2</th>
<th>If grade 3a</th>
<th>If grade 3b, 4 or 5</th>
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<tr>
<td>1. The Council would not normally support development on the best agricultural land.</td>
<td>1. The developer's proposal should:</td>
<td>No additional info required, unless the agricultural practice that the proposal would replace (if that practice cannot be continued with the proposal in situ) makes a special contribution to the environment or local economy.</td>
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<td>2. The best quality land should be used solely for agriculture purposes.</td>
<td>2. Provide an explanation of why the development needs to be located on the site and not on land of a lesser agricultural classification within the area.</td>
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<td>3. Clear and compelling justification on the benefits a development would have for the land to be taken out of full agriculture use would have to be demonstrated.</td>
<td>3. Provide information on the impact of the proposed development on the local area’s supply of farming land within the same classification.</td>
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<td>4. All criteria set out for grade 3 land would need to be considered.</td>
<td>4. If the proposed development site makes up part of an existing farm, provide information on the viability of this farm to continue to function (as an agricultural unit) with the development in situ.</td>
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<td>5. Explain how it is proposed to continue using the application site for farming alongside the solar PV development.</td>
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<td>5. Consider the cumulative impact of the proposed development and other permitted large-scale solar PV developments on the supply of agricultural land within the same classification across the local area.</td>
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i) *Ground Maintenance*

Vegetation will grow under the solar panels and this will require management, particularly to avoid the site becoming overgrown with noxious weeds and to assist with the eventual restoration of the site, normally to agriculture. There are various techniques for managing the vegetation, these include mowing, strimming, grazing, spraying or mulching.

Spraying should be avoided wherever possible and mulching large areas is likely to present technical challenges and may add to the landscape/visual impact of a development proposal. Few of these management techniques are regarded as sustainable, particularly on larger sites, and there is a desire, both in terms of food production and the rural scene, to continue an agricultural use on the site.

Grazing is therefore to be encouraged wherever practicable. Cattle, horses, pigs and goats are likely to be too ‘physical’ with the solar PV arrays but sheep, chickens or geese should be acceptable. In order to facilitate grazing within the solar farm it is advised that solar panels are positioned at least 900mm above ground level and all cabling etc. is suitably protected.
Adequate spacing between rows of panels is necessary to avoid overshadowing. Vegetation will grow between these rows and this vegetation will require management. The image to the right shows the 1.4MW Wheal Jane solar PV farm, Cornwall. Image courtesy of Lightsource Limited.

**j) Construction Compound**

The development of a large scale solar PV array will require the delivery and storage of construction materials, plant, machinery and office/welfare accommodation. It is therefore likely that a temporary construction compound will be required. Such compounds should be carefully located in order to minimise environmental or amenity impact and any planning application should contain details of their size and location. Topsoil and subsoil should be stripped from such areas and stored on site for replacement following the completion of construction works. Details of such soil stripping, storage and replacement should be contained within any planning application, together with the anticipated life of the construction compound.
Case Study 1

Old Rides Farm, Isle of Sheppey

Background

Old Rides Farm lies south-east of Eastchurch on the Isle of Sheppey in Kent. The site was formerly an agricultural field, adjacent to Standford Hill HM Prison which has two 2.3MW wind turbines. It lies within 500m of the Swale SSSI, Ramsar Site and Special Protection Areas along the Swale Estuary.

A planning application was submitted for the development of a 8MW solar farm at the site. This involved the installation of over 32,000 solar PV panels on a site of 14 ha with associated inverters, substation and security fencing.

Issues & Mitigation

The main issues with regard to this open site, adjacent to the Swale Marshes, were its potential landscape and visual impacts and its ecological impact. As such Landscape and Visual Impact Assessments and Ecological Assessments were necessary. They concluded that mitigation measures consisting of native tree and hedge planting, buffer strips, bird and bat boxes and log piles would minimise adverse impacts and help restore the landscape character in this part of the Isle of Sheppey and well as provide biodiversity enhancements. The land around the panels is seeded with mixed species grass and managed by sheep grazing, providing extra income for the landowner and continuing the agricultural use.

The field was assessed as Grade 3b and the loss of best and most versatile agricultural land was therefore not a significant planning issue in this case.

Planning permission was granted for a period of twenty five years. Construction is complete and the farm is now capable of producing enough electricity annually to supply 2,500 average size households.
k) **Soil stripping, Storage and Replacement**

The development of a large scale solar installation is likely to require the excavation of soils associated with construction compounds, access roads, cable trenching etc. Where such soil stripping occurs topsoil and subsoil should be stripped, stored and replaced separately in order to minimise soil damage and to provide optimal conditions for site restoration. Any planning application should contain a methodology for soil stripping, storage and replacement and this methodology should subsequently be adhered to during site development.

l) **Access Tracks**

Solar PV facilities which are developed on agricultural land should:

- aim to minimise disturbance to the agricultural land;
- be temporary, capable of removal and ‘reversible’; and
- minimise their landscape/visual impact and their impact on the rural scene.

The installation and use of access tracks should be kept to an absolute minimum. Access tracks between rows of solar panels will generally not be acceptable. Agricultural vehicles, including tractors, quad bikes and 4WD, should be capable of servicing these facilities without the need to construct access tracks.

Buffer strips of 5m+ between hedges and solar panels could be used for access purposes while also providing access for hedge management and biodiversity.
m) Security Fencing/Lighting

Applicants will be expected to direct considerable effort towards minimising the landscape/visual impact of solar PV arrays. Whilst there is an acknowledged need to ensure solar PV facilities are adequately secured it would be unfortunate if such security measures resulted in an unacceptable landscape/visual impact. Applicants should:

- minimise the use and height of security fencing;
- utilise existing features, such as hedges or landscaping, to screen security fencing;
- use natural features, such as vegetation planting, to assist in site security;
- minimise the use of security lighting. Any lighting should utilise a passive infra-red (PIR) technology and should be designed and installed in a manner which minimises glare, light pollution and impacts on biodiversity, in particular bats (see ecology section);
- Ensure that appropriate measures are in place to facilitate continued access by larger mammals, such as badgers and foxes.

Close welded mesh panel fencing, as shown here at the Wheal Jane solar farm, generally has a low landscape/visual impact while also being versatile and providing a good level of site security
In some instances specialist fencing may be necessary in order to prevent access by deer. Such deer fencing can be much less intrusive than other forms of fencing and should be considered where possible.

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

Photo courtesy of The Green Company

Where pole mounted CCTV facilities are proposed the location of these facilities should be carefully considered in order to minimise visual/landscape impact. In exposed landscapes such structures should be avoided where possible.

Further Security Advice from the Police is provided in Appendix D.
n)  **Ground Anchors**

Solar PV facilities which are developed on agricultural ground should be 'reversible', allowing the site to be easily restored to a more intensive agricultural use.

Intrusive development, such as trenching and foundations, should therefore be minimised and the use of concrete should be avoided. Solar PV arrays should be installed using 'pile' driven or screw foundations, or pre-moulded concrete blocks (shoes), and capable of easy removal.
Where 'pile' driven foundations are proposed applicants should ensure that such development would not exceed statutory noise levels at any nearby noise sensitive properties.

o) Tracking

Some solar PV arrays will follow the daily movement of the sun across the sky in order to take maximum advantage of the solar gain. These systems are known as 'trackers' and, although they maximise solar gain, they are expensive to install and maintain. Some solar PV arrays will be static. These are less expensive to install and maintain but, because they do not follow the sun’s movement, they are not as efficient as ‘trackers’. A compromise is reached with some solar arrays which are generally static but can be moved quarterly to reflect seasonal changes in the movement of the sun across the sky. The type of solar PV array installed, and the extent of any 'tracking', will have an impact on the landscape/visual assessment and the planning application should clearly indicate the type of array proposed.

The impact of 'trackers' on grazing animals such as sheep should be carefully considered to avoid such animals becoming trapped in any moving parts.
p) **Grid Connection**

Any buildings required in order to house electrical switchgear inverters etc should be designed and constructed in order to minimise their landscape and visual impact and maximise opportunities for habitat creation. They should typically be of an ‘agricultural style, clad with timber or local stone.

The capacity of the electrical grid network in Swale Borough may be one of the greatest constraints to the development of solar PV farms. Such development is likely to be attracted to suitable sites within 2km of an existing electrical substation with sufficient capacity to accommodate the additional electrical supply. There is likely to be considerable interest in some areas and electricity substations may be unable to accommodate all development interest. It is likely that developers will have approached the relevant power distribution network provider to evaluate sites as part of the pre-application process.

Application proposals should provide a broad indication of the route of connectivity to the electrical grid. Such connectivity should avoid areas of high landscape, ecological or archaeological sensitivity.

q) **Landscape and Visual impact**

The landscape/visual impact of a solar PV park is likely to be one of the most significant impacts of such development.

Developers may be attracted to southerly sloping sites, where solar gain is greatest. However such sites may be of high agricultural value and are likely to be more visible within the wider landscape.

Solar farms are regarded as a temporary use of land (refer to Duration of Planning Permission at the end of the Guidance) and as such the removal
of existing vegetated field boundaries, including hedges will not be permitted as this will irrevocably alter the landscape character of the site.

The development will need to have regard in both its design layout, and future maintenance plans for the retention of growth of vegetation on these important boundaries, including the opportunity for individual trees to grow on to maturity. Careful consideration should be given to the impact of existing or proposed vegetation in order to ensure that any resultant shading of solar panels does not result in the future pruning or felling of such vegetation.

The landscape/visual impact of development across the borough must be considered with great care at the pre-application stage and mitigation measures proposed wherever necessary. Guidance on the information which should be provided within a Landscape and Visual Impact Assessment is covered in Appendix A. Swale’s Landscape Character and Biodiversity Appraisal should be referenced in all applications and can be found at www.swale.gov.uk/landscape-character-appraisal-september-2011/

Existing hedges and established vegetation, including mature trees, should be retained wherever possible. Trees and hedges should be protected during construction. The impact of the proposed development on established trees and hedges should be informed by a tree survey (to BS 5837) and/or a hedge assessment as appropriate. In many cases significant tree/hedge planting will be required. Reference to Swale Borough Council document, Planting on New Development: A guide for Developers (www.swale.gov.uk/assets/Planning-Forms-and-Leaflets/Planting-On-New-Developments-feb-2011.pdf) should also be made.

Any buildings associated with the solar array, eg to house electrical switchgear and inverters, should be designed and constructed to minimise their landscape and visual impact and materials should be selected to reflect the local landscape context. If a pre-fabricated building is to be used, consideration should be given to the need to screen the building with vegetation and provide habitat opportunities.

A significant part of Swale lies within the Kent Downs Areas of Outstanding Natural Beauty (AONB). The extent of the AONB can be seen on the Kent Downs AONB website www.kentdowns.org.uk/interactive-map . The purpose of the AONB designation is to conserve and enhance the natural beauty of the area. The designation gives formal recognition to an area’s landscape importance and allows for the development of communities and economic activity. The AONB designation is not necessarily a constraint on all renewable energy development. Developments are encouraged provided that they do not have a significant adverse impact on the AONB.
The Kent Downs AONB Unit have produced a Position Statement and Companion Report on Renewable Energy and this should be referred to for applications within the AONB and its setting [www.kentdowns.org.uk/guidance-management-and-advice/renewable-energy1](http://www.kentdowns.org.uk/guidance-management-and-advice/renewable-energy1).

Swale also has land designated as Special Landscape Areas and Areas of High Landscape Value. These are shown on the Swale Borough Local Plan 2008 Proposals Map [maps.swale.gov.uk/LocalPlans/LP_document/indexmap.html](http://maps.swale.gov.uk/LocalPlans/LP_document/indexmap.html). Within these areas the priority is the protection and enhancement of these landscape assets and reference to these designations should be made in relevant applications.

Planning policies in the Swale Borough Local Plan 2008, particularly E9 (Protecting the Quality and Character of the Borough’s Landscapes), as well as policies in the emerging Swale Local Plan, Bearing Fruits, should be referenced in applications.
Cumulative Impact

Swale Borough Council maintains a record of all EIA Screening requests received in respect of proposals for large scale solar PV installations and a register of all planning decisions. Planning applications are also available to view on UK Planning. Prospective applicants are advised to contact the Council to review these records at an early stage in order that, where necessary, the issue of cumulative impact for such development can be considered and addressed when preparing any planning application.

r) Ecology

Solar arrays could have implications for habitat loss, fragmentation and modification and for displacement of species. The nature of impacts will depend on the ecological characteristics and features of the site and sensitivity to proposed changes. Schemes may reduce habitat and habitat suitability for some species, but may also be capable of integrating different uses of land and delivering environmental gains. The NPPF sets out the national approach to conserving and enhancing the natural environment and the adopted and emerging Swale Borough Local Plans sets out the local approach. It will be important to consider impacts through the construction, operation and decommissioning stages of a scheme.
The most important thing to get right with respect to ecology is choosing an appropriate location. Intensively managed agricultural land is likely to be of least ecological interest and therefore most suitable, in ecological terms, for solar PV farms. The proximity of and effect on environmentally sensitive sites (eg Ramsar sites, Special Protection Areas and SSSIs) and species must also be fully considered in any proposal.

Design should be informed and influenced by ecological assessments (phase 1 habitat surveys, protected species surveys etc). Issues that may need particular assessment include ground nesting birds, wintering birds, bats, dormice, reptiles and badgers. The use of an advising ecologist throughout the design process can ensure that adverse impacts are mitigated and biodiversity enhancements are maximised. (NB. Protected species surveys are season-dependent so contacting an ecologist at a very early stage is advisable).

The assessment will need to include a 'desk study' for existing ecological records, an evaluation of the likely impacts of the solar PV farm upon ecological features, specify mitigation to avoid/minimise these impacts and list any further surveys required. The main impacts and mitigation requirements are likely to be:

**Lighting** - security lighting may affect bats. It is advised that lighting is not used unless absolutely necessary. If lighting is necessary it must be minimised and directed away from hedges/woodland/scrub. A bat survey will be needed to inform any other mitigation required and indeed whether lighting would be allowable on site.

**Cables** - overhead and underground cables have the potential to adversely impact upon biodiversity. Cable routes need to be carefully designed in consultation with the consulting ecologist.

**Construction** - we advise that hedges are fully retained and no new hedge breaks are created. If any hedges/scrub are to be removed, further surveys including for dormice and reptiles may be necessary. Pile driving may affect any badgers nearby; this will need to be informed by a badger survey and a licence may be necessary.

**Fencing** - we advise that large buffer strips (at least 5m) are left between perimeter fencing and existing hedges. The fencing must allow badgers, reptiles and other fauna access into the site (whilst retaining grazing sheep). We advise a gap to allow small mammals and reptiles access is left around the entire base of the fence, with larger gaps or gates for badgers at suitable intervals.
**Enhancement, Management and Monitoring**

Solar PV farms have the potential to increase the biodiversity value of a site if the land was previously intensively managed. Sheep grazing or an autumn cut with removal of grass cuttings could increase the botanical diversity of the site. The ecological consultant should specify a suitable management regime for each case, bearing in mind shading by the solar panels. Hedges should be managed appropriately and could be laid to reduce gaps.

Proposed enhancements should build upon and extend existing habitats or create new important habitats e.g.: cultivated strips/plots for rare arable plants, rough grassland margins, bumble bee plant mixes, wild bird mixes, etc.

It is advised an ecological monitoring programme is developed to monitor impacts upon the flora of the site and upon any particular features (e.g. bats, wintering birds). Results of the monitoring will then inform any changes needed to the management/grazing regime.
A 5m buffer strip between the field boundary and any fencing will allow access for maintenance purposes, minimise damage to the field boundary and provide an access corridor for wildlife.

Checklist for advising on potential nature conservation impacts:

- Could the development site, alone or cumulatively, have impacts on a designated site and its objectives or designation?
- Is the site (habitat/species) sensitive to changes likely to result from a solar PV scheme?
- Can the site successfully integrate land uses and deliver environmental benefits?
- Are proposed mitigation measures adequate and likely to be effective?
- Is post-construction monitoring necessary?
- Have impacts been properly assessed in the Environmental Statement/Habitats Regulations Assessment or other ecological assessment? What are the conclusions and have they been addressed?
- Are there opportunities for environmental enhancement, such as creation of new natural screening features or management of the land/margins for conservation purposes?
- Are enhancement measures appropriate and do they contribute to wider aims in the area, such as Biodiversity Action Plans (BAP)?

Solar farms can offer the opportunity to increase biodiversity and hence it is desirable to maximise the environmental benefit to the land where they are located. Guidance produced by Natural England should be considered, namely Information Note TIN101 “Solar parks: maximising environmental benefits” (publications.naturalengland.org.uk/publication/32027) and the BRE National Solar Centre Biodiversity Guidance for Solar Development at, www.bre.co.uk/filelibrary/pdf/Brochures/NSC-Biodiversity-Guidance.pdf which offer more detailed advice on these aspects of solar farm development.

s) Proximity to Public Footpaths, Bridleways and Highways

The existence of Public Rights of Way (PROW), including public footpaths, bridleways and highways, should be carefully considered at the site selection and design stage. Solar PV facilities should not, by virtue of its size, scale or setting, have an unacceptable impact, either during its construction or operation, on users of such a PROW. Where a PROW may be affected by such development careful mitigation, including appropriate landscape planting, should be considered and detailed within any planning application. Additional measures, such as the erection of an interpretation board explaining the role of the facility, may allow the development to become an accepted feature along the PROW.
t) **Historic Environment**

The impacts of solar PV developments on the historic environment will require expert assessment in most cases. Solar developments may affect heritage assets (sites, monuments, buildings and landscape) both above and below ground. Above ground impacts may include the effects of applications on the setting of Listed Buildings and Scheduled Monuments as well as on the Historic Landscape Character of the area. Below ground impacts may include direct impacts on archaeological deposits through ground disturbance associated with trenching, foundations, fencing, temporary haul routes etc.

Swale Borough Council will expect all proposals to have been informed by a consultation with the Historic Environment Record (HER) maintained by Kent County Council. Any application should identify the presence of both designated and undesignated heritage assets which may be affected by any development and identify if there will be a requirement for further information to support an application. If such a requirement is identified we will expect applicants who wish to proceed with such sites to undertake a further consultation with Kent County Council who will advise on a brief for the required expert assessment or evaluation work.

The results of such assessments will be expected as supporting information in advance of the validation of applications. Swale Borough Council expects such assessments to follow the briefs set by the Historic Environment Service and to demonstrate the use of appropriately qualified professional expertise. Where assessments are absent or inadequate the Council may request further work to be undertaken in advance of determination. We will expect applications to take account of the results of historic environment assessments in their design, for instance through the sensitive planning of installations. Any opportunities to introduce better management of affected assets, or to improve the settings of designated sites, should be identified and this will be actively encouraged.


Information on Listed Buildings in Swale may be found at [www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/](http://www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/).

u) **Drainage, Surface Water Run-off and Flooding**

Due to the size of solar PV parks, planning applications will be expected to be accompanied by a Flood Risk Assessment. The guidance of the Environment Agency should be sought with regard to these. This will need to consider the impact of drainage. As solar panels will typically drain to the existing ground, the impact will not in general be significant and therefore this should not be an onerous requirement.

However, on sloping sites the concentration of run-off from panels could lead to the formation of gullies. This is more likely where the underlying soils are not naturally free draining, the site is steep and the arrays are installed up-and-down the slope, rather than along contours. Simple Sustainable Drainage Urban Drainage Systems (SUDS) drainage techniques, such as shallow swales or infiltration trenches, should be adopted to overcome this. These should aim to disperse the run-off at regular intervals to allow it to soak into the natural ground and prevent drainage paths forming straight down the slope. To avoid the concentration of flows, these should not necessarily be linked through the site but can be a series of short, contoured
features.

Where access tracks need to be provided, permeable tracks should be used, and localised SUDS, such as swales and infiltration trenches, should be used to control any run-off.

Given the temporary nature of solar PV park sites, they should be configured or sites selected to avoid the need to impact on existing drainage systems and watercourses. Culverting existing watercourses/drainage ditches should be avoided. Where culverting for access is unavoidable, it should be demonstrated that no reasonable alternatives exist and where necessary only be used temporarily for the construction period.

v) **Glint and Glare**

Glint may be produced as a direct reflection of the sun in the surface of the PV solar panel. It may be the source of the visual issues regarding viewer distraction. Glare is a continuous source of brightness, relative to diffused lighting. This is not a direct reflection of the sun, but rather a reflection of the bright sky around the sun. Glare is significantly less intense than glint.

![Photovoltaic Solar Panels - Glint & Glare](image)

*Figure 1*
Solar panels are designed to absorb, not reflect, solar irradiation. However the sensitivities associated with glint and glare, and the landscape/visual impact and the potential impact on aircraft safety and on wildlife, should not be underestimated.

All applications should include a glint and glare assessment. This will be particularly important if 'tracking' panels are proposed as these may cause differential diurnal and/or seasonal impacts.

The potential for PV panels, frames and supports to have a combined reflective quality should be assessed. This assessment needs to consider the likely reflective capacity of all of the materials used in the construction of the solar farm.

w) **Community Involvement**

Community Involvement - Community involvement should be considered as an integral part of the development process. The local community should be engaged, by the developer, at the pre-design, conceptual stage, ideally utilising a local exhibition/presentation where community views can be sought and recorded. Consultation should allow sufficient time to seek community views/opinions, and take them into consideration, prior to the submission of any planning application. Any planning application should detail the exhibitions/presentations, any views/representations received and how any planning application was influenced/amended to accord with such representations.

The developer may also wish to undertake an exhibition/presentation following the submission of a planning application.
x) **Airport Safety**

The Civil Aviation Authority (CAA) is seeking to develop its policy on the installation of solar photovoltaic systems and their impact on aviation. Further information may be viewed at; [www.caa.co.uk/homepage.aspx?catid=752](http://www.caa.co.uk/homepage.aspx?catid=752)

y) **Electricity Generating Capacity**

Planning applications for commercial scale solar PV development should clearly indicate the installed capacity (MW) of the proposed facility. While it is accepted that the performance of the solar panels may degrade over time the initial installed capacity should be provided. The 'capacity factor' and estimated annual production (MWh p.a.) should also be provided together with the number of residential properties electricity equivalent for UK, south east and Swale properties. A pro forma table, explaining these terms, is attached as Appendix B. This information will allow members of the public, and elected Members, to clearly understand the generating capacity of the proposed facility.

z) **Duration of Planning Permission and potential conditions**

The Feed in Tariff for solar PV applies for a period of 20 years. Solar farms should normally be regarded as a temporary use of land, and hence the need for 'reversibility', and the ability for all structures to be removed and the land returned to its original use. Planning permissions will normally;

- Need to be implemented within a period of three years
- Contain a timeframe for the completion of the construction and commissioning of the development
- Be for a temporary period only, and a maximum period of 20 or 25 years from the commissioning of the facility should be applied.

Planning applications should specify the length of time being applied for. A 20 or 25 year time limit will normally be imposed. An example of planning conditions used on a solar farm in Swale are set out in Appendix C.
Appendix A: Guidance on the information which should be provided within a Landscape and Visual Impact Assessment

It is vital that landscape considerations are embedded in the decision making process, as the most significant environmental effect of a development such as this, will frequently be the impact on landscape character and visual amenity.

One question to be addressed is whether this solar farm scheme is likely to give rise to significant environmental effects on the landscape of Swale Borough, and thereby whether an Environmental Statement will be required.

There are a number of elements associated with a solar farm development which have the potential to influence the significance of the impacts on landscape character and visual amenity:

- Gradient of the site and the surrounding landform,
- Extent of the application site,
- Height and layout of the panels,
- Colour of the panels’ surrounding frames,
- Treatment of the ground below and between the panels, for example to grow crops, graze livestock, or to lay down mulch to reduce maintenance,
- Perimeter fencing.

Landscape and Visual Impact Assessment – Third Edition – Landscape Institute and Institute of Environmental Management and Assessment 2011 provides advice on an appropriate approach to landscape assessment. The council would expect any application to be accompanied by an assessment based on the principles set out in this document.

Whether the EIA Regs are applied to the application or not, the impact of the proposal on landscape character and visual amenity needs to be examined through a comprehensive Landscape and Visual Impact Assessment. Such an assessment will need to cover the following detail:

1. **Description of the development**
   - The need for the development set within local regional and national strategies;
   - The timescale for construction, operation and decommissioning;
   - The site’s location and overall layout;
   - 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 selection, 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;
- Evaluation of the direct, indirect, secondary and cumulative, short medium and long term effects resulting from the existence of the development.

3 Landscape Baseline Conditions

- The current condition of the landscape;
- Swale’s Landscape Character and Biodiversity Appraisal 2011 provides the framework landscape character information, this should be supplemented by a study to assess the specific impact of the development
- Relationship of the site to any designated areas of landscape at a national, regional or local level, and to areas of landscape value or scenic quality.
- Description of all baseline date sources, and methods used to supplement this information;
- The landscape baseline should be evaluated in relation to its sensitivity and importance. The sensitivity evaluation of each landscape element should reflect its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted.

4 Predictions of Impact

- Assess the scale, or magnitude of change to the landscape and visual elements as a deviation from the baseline conditions for each phase of the proposal. Consideration will need to be given to visitor and resident populations, and seasonal variations;
- Provide a Zone of Theoretical Visibility (ZTV) diagram for the development indicating as a minimum 1km, 2km, and 4km radii from the site;
- The methods used to establish the magnitude should be clearly described and be appropriate and reasonable in relation to the importance of the landscape and visual impact;
- Where assumptions or unsupported data has been used in the predictions, these should be highlighted and accompanied by an indication of the reliability / confidence of those assumptions or data;
- Evaluation of the direct, indirect, secondary and cumulative, short medium and long term effects resulting from the existence of the development.
5 Impact Significance

- Clearly describe the judgements which underpin the attribution of significance;
- The assessment of significance should consider the impact's deviation from the established landscape baseline condition, the sensitivity of the landscape and receptors and the extent to which the impact will be mitigated or is reversible;
- The range of factors which are likely to influence the assessment of significance should be clearly identified;
- Provide detail of how these variables will affect the significance of the impacts over the life of the development;
- Identify the significance of impacts that remain following mitigation.

6 Mitigation

- Describe the measures proposed to avoid, reduce and if possible remedy significant adverse impacts on both landscape character and visual amenity;
- Provide an indication of the anticipated effectiveness of the stated measures;
- Give a clear indication of how the mitigation measures will be implemented.

7 Presentation of the Landscape and Visual Impact Assessment

- The document should be clear and logical in its layout and presentation and be capable of being understood by a non-specialist;
- It should be a balanced document providing an unbiased account of the landscape and visual effects, with reasoned and justifiable arguments;
- A glossary of all technical terms and full reference list should be provided;
- Plans, diagrams and visual representations should be provided to assist in the understanding of the development and its impact, and should be clearly labelled with all locations referenced in the text.

8 Non-Technical Summary

1. A standalone document should be available to enable a non-specialist reader to understand the landscape and visual impacts of the proposal;
2. It should include a summary description of the development; the aspects of landscape character and visual amenity likely to be significantly affected; the likely significant effects; the mitigation measures to be implemented;
3. Should also include as a minimum the plans, maps and other visual representations which illustrate the location of the application site, the footprint of the development, and the location of key features.

Should you require any further advice or clarification of matters raised here, please contact planningpolicy@swale.gov.uk
Appendix B: Electricity Generating Capacity

Planning applications for commercial scale solar PV development should be accompanied by the following information.

<table>
<thead>
<tr>
<th>Installed capacity (MW) 1</th>
<th>Capacity factor 2</th>
<th>Estimated annual production (MWh p.a.) 3</th>
<th>Number of residential properties electricity equivalent 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

Notes:

1 Installed capacity is the full-load, continuous rating of generating equipment under specific conditions as designated by the manufacturer. In other words, this is the power generated when the equipment is working at full capacity.

2 Capacity factor is the calculated factor which compares the plant’s actual production over a given period of time with the amount of power the plant would have produced if it had run at full capacity for the same amount of time. The capacity factor should take account of the specific equipment and the specific location. It is expressed as a percentage.

3 Estimated annual production of electricity based upon the installed capacity and the capacity factor.

4 Number of residential properties that would be powered by the estimated annual production based upon the U.K. average household consumption of 4,629 KWh/year,
Appendix C: Example of Planning Conditions for
Standalone or Ground Mounted Solar PV Installations

The following Notification of Grant of Permission to Develop Land is an example of typical planning conditions that may be required for a large scale solar farm. Please note that further or different conditions may be required on other proposals on different sites.

Notification of Grant of Permission to Develop Land at Old Rides Farm, Eastchurch, Sheppey - PTO
TOWN AND COUNTRY PLANNING ACT 1990

NOTIFICATION OF GRANT OF PERMISSION TO DEVELOP LAND

TO: Sunsave 9 (Old Rides) Ltd
    C/o Mr J Stone
    28 Church Road
    Burgess Hill
    West Sussex.
    RH15 9AE

TAKE NOTICE that Swale Borough Council, in exercise of its powers as a Local Authority under the Town and Country Planning Acts, HAS GRANTED PERMISSION for development of land situated at:

Old Rides Farm, Leysdown Road, Eastchurch, Sheppey, Kent, ME12 480

and being Installation of an 8 MWP solar photovoltaic farm; comprising 32,832 solar panels and associated transformer inverter units, and substation, with associated security fence, grid connection and landscaping

referred to in your application for permission for development accepted as valid on 15 November 2012

SUBJECT TO THE CONDITIONS specified hereunder:

(1) The development to which this permission relates must be begun not later than the expiration of three years beginning with the date on which the permission is granted.


YOUR ATTENTION IS DRAWN TO THE NOTES OVERLEAF

For further conditions and grounds- see attached sheet
Condition listing approved drawings:

(2) The development hereby approved shall be carried out in accordance with the following approved plans:

(i) Solar Boundary Map (1:10, 000 at A4)
(ii) 2100.AP.004.0.B
(iii) 2100.AP.004.0.C
(iv) E554-28-01-0
(v) MP-TEC 2:25-69/01 revision 01
(vi) 2100.EP.002.3.A (grid connection)
(vii) 21.00.EP.001.3.A (inverter and transformer approval)
(viii) 2100.AP.:ao3.3.A (temporal construction storage)
(ix) 2100.AP.002.3.A (fence detail)
(x) 2100.AP.000,3.C: (array layout)
(xi) 175-01-04B (site layout)
(xii) 175/02/01A (planting section)

Grounds: For the avoidance of doubt and in the interests of proper planning.

Pre-commencement conditions:

(3) During construction: of the development space shall be provided on site, in the position shown on drawing number 2100.AP.003.3.A, to enable all employees and contractors vehicles to park, load and off load and turn within the site. Before the development is commenced, details of the surfacing of this area, shall be submitted to and agreed in writing by the Local Planning Authority and shall be carried out as approved.

Grounds: In the interests of highway safety and convenience in accordance with Policy E1 of the Swale Borough Local Plan 2008.

(4) Adequate precautions shall be taken during the period of site preparation and construction to prevent the deposit of mud and/or other debris on the public highway, in accordance with details that shall first have been submitted to and approved in writing by the Local Planning Authority.

Grounds: In the interests of highway safety and convenience in accordance with Policy E1 of the Swale Borough Local Plan 2008.

For further conditions and grounds- see attached sheet
TOWN AND COUNTRY PLANNING ACT 1990

Application  SW/12/1448
Case no.  04678

(5) The boundary fence to the perimeter of the site, as shown on drawing number 2100.AP.002.3.A, shall be powder coated green (RAL 6005).

Grounds: In the interests of visual amenity and in pursuance of Policies E1, E9 and E19 of the Swale Borough Local plan 2008.

(6) Notwithstanding the details shown on 175-01-04B (site layout) and 175/02/01A (planting section), none of the solar arrays hereby approved shall be installed, until full details of both hard and soft landscape works have been submitted to and approved in writing by the Local Planning Authority. These details shall include existing trees, shrubs and other features, planting schedules of plants, noting species, plant sizes and numbers where appropriate, means of enclosure, hard surfacing materials, and an implementation programme.

Grounds: In the interests of the visual and landscape amenities of the area and in pursuance of Policies E1, E9 and E19 of the Swale Borough Local Plan 2008.

(7) The sub-station and inverter buildings hereby approved shall be finished in cladding of a type and colour to be agreed in writing by the Local Planning Authority before they are erected, and shall be retained as such for the duration of the development.

Grounds: In the interests of the visual amenities of the area and in pursuance of Policies E1, E9 and E19 of the Swale Borough Local Plan 2008.

(8) No development shall take place until full details of the scheme for surface water drainage has been submitted to and approved by the Local Planning Authority. The approved details shall be implemented before the first use of the development hereby permitted.

Grounds: In order to ensure controlled surface water drainage and in pursuance of Policy E1 of the Swale Borough Local Plan 2008.

(9) No development shall take place until there has been submitted to and approved in writing by the Local Planning Authority a detailed ecological management and enhancement plan for the site to include, and build upon, the principles and the recommendations set out in the 'Environmental Site Management Plan' (received 29/11/12). The requirements of the agreed Plan shall then be adhered to throughout the operational life of the development.

For further conditions and grounds - see attached sheet
Grounds: To ensure there is no detrimental impact upon ecological interest at the site, and in the wider area, and to enhance biodiversity in accordance with Policies E11 and E12 of the Swale Borough Local Plan 2008 and the NPPF 2012.

(10) No development shall take place until a scheme setting out arrangements to safeguard the public sewer (and access to it) where it crosses the site, both during the construction phase and the operational phase, has been submitted to and approved by the Local Planning Authority. The development shall then be implemented in accordance with the approved details.

Grounds: In the interests of safeguarding the foul sewerage system, and in pursuance of Policy E1 of the Swale Borough Local Plan 2008.

(11) No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written specification and timetable which has been submitted to and approved in writing by the District Planning Authority.

Grounds: To ensure that features of archaeological interest are properly examined and recorded in pursuance of policies E1 and E16 of the 13 Swale Borough Local Plan 2008.

Non pre-commencement conditions

(12) No construction work in connection with the development shall take place on any Sunday or Bank Holiday, nor on any other day except between the following times:

Monday to Friday 0730 – 1900 hours, Saturdays 0730 – 1800 hours unless in association with an emergency or with the prior written approval of the Local Planning Authority.

Grounds: In the interests of residential amenity and in pursuance of Policy E1 of the Swale Borough Local Plan 2008.

(13) All hard and soft landscape works shall be carried out in accordance with the approved details. The works shall be carried out prior to the occupation of any part of the development or in accordance with the programme agreed in writing with the Local Planning Authority.

Grounds: In the interests of the visual amenities of the area and in pursuance of Policies E1 and E9 of the Swale Borough Local Plan 2008.

For further conditions and grounds- see attached sheet
(14) Upon completion of the approved landscaping scheme, any trees or shrubs that are removed, dying, being severely damaged or becoming seriously diseased within ten years of planting shall be replaced with trees or shrubs of such size and species as may be agreed in Writing with the Local Planning Authority, and within whatever planting season is agreed.

Grounds: In the interests of the visual amenities of the area and in pursuance of policies E1 and E9 of the Swale Borough Local Plan 2008.

(15) Within 25 years of the date of this decision, or within six months of the cessation of electricity generation by the solar PV facility, or within six months following a permanent cessation of construction works prior to the solar facility coming into operational use, whichever is the sooner, all development hereby permitted including the solar PV panels, frames, inverter modules, all foundations, track ways and all associated structures and fencing shall be dismantled and removed from the site. The developer shall notify the Local Planning Authority in writing no later than five working days following cessation of power production. The site shall subsequently be restored to agricultural land in accordance with a scheme, the details of which shall be submitted and approved in writing by the Local Planning Authority prior to the commencement of electricity generation from the development.

Grounds: To ensure the achievement of satisfactory restoration of the land in accordance with Policies E1, E9 and E19 of the Swale Borough Local Plan, Policies NRM15 and C4 of the South East Plan 2009 and the NPPF 2012.

(16) No external lighting - (whether permanent or temporary) shall be installed or retained at the site once operational;

Grounds: In the interests of visual amenity and biodiversity in accordance with Policies E11 and E12 of the Swale Borough Local Plan 2008 and the NPPF 2012.

Reason for approval

Having taken all material considerations into account, it is considered that subject to compliance with the attached conditions, the proposal would be in accordance with the development plan and would not cause unacceptable harm to the amenities of the area or prejudice highway safety or convenience. In resolving to grant permission, particular regard has been had to the following policies: NRM13, NRM14, NRM15 and NRM16 of the South East Plan (2009); and SP1, SP2, SP3, E1, E6, E9, E10, E11, E12, E13, E16, E19, RC1, T1, T3, and U3 of the Swale Borough Local Plan; and the Supplementary Planning Document 'Swale Landscape Character and Biodiversity Appraisal' (2011).
Council's approach to this application:

The Council recognises the advice in paragraphs 186 and 187 of the National Planning Policy Framework (NPPF) and seeks to work with applicants in a positive and proactive manner by offering a pre-application advice service; having a duty planner service; and seeking to find solutions to any obstacles to approval of applications having due regard to the responses to consultation, where it can reasonably be expected that amendments to an application will result in an approval without resulting in a significant change to the nature of the application and the application can then be amended and determined in accordance with statutory timescales.

In this case the Council has worked with the applicant's agent to successfully resolve issues that would otherwise have prevented the grant of planning permission.

14th February 2013
Dated: ...................................................... James Freeman, Head of Planning
Appendix D Advice on Security and Crime Prevention

The following text has been kindly provided by Kent Police.

The site should be fully enclosed within a minimum 2m security fencing system (or higher). It is however, important that the gap between the base of any fencing and the ground is minimal, so that any equipment, such as the PV panels themselves or copper cable, cannot be easily passed underneath by thieves.

Additional defensive planting of natural hedging can also be considered around the boundary as an added layer of security.

All inverter, substation, transformer and control buildings/cabinets should be fully alarmed with a monitored system and covered by CCTV.

Appropriate security locks and devices should be installed on all equipment cabinets and associated buildings. Locking device screws/bolts should not be easily accessible when closed, to deter by-passing of the locks themselves by a determined offender. One way security clutch head security bolts/screws or similar can also be utilised to prevent easy removal.

Hinge pins for equipment cabinets, associated buildings and gates should be hidden when closed and/or fitted with anti-lift devices.

We recommend that all photovoltaic (PV) solar panels are individually security marked and all serial numbers recorded within a site inventory.

We recommend that PVs are installed using one way security clutch head security bolts/screws or similar, as an added layer of security and in order to make removal more difficult for thieves.

Copper cable; transformers; inverters; switch gear and any other equipment of high value should be security marked. This can be achieved by using unique identifiers, such as serial numbers on the insulation sheathing and / or with the use of forensic marking solutions. A full equipment inventory should be kept.

Appropriate crime prevention/security signage warning of the use of CCTV and forensic marking solutions should be installed on the exterior face of the security fencing and any gates.

Given the amounts of equipment and copper cable likely to be on site during construction, it is essential that the site is secured and appropriate temporary alarm and CCTV systems are installed, particularly if a security guard is not to be employed during construction. Any plant and associated fuel bowsers should also be secured, alarmed and immobilised at the end of each working day.

We would also highly recommend that the developer meet with Kent Policy to discuss security measures for any solar farm array applications.
Copies of this Swale Borough Council document are available on the Council website www.swale.gov.uk. If you would like further hard copies or alternative versions (i.e. large print, audio, different language) we will do our best to accommodate your request please contact the Council at:

Swale Borough Council
Swale House, East Street
Sittingbourne
Kent, ME10 3HT

Customer Service Centre 01795 417850