Principles for ground-mounted solar done well

March 2025

Purpose

This guidance note is for people in the CPRE network. It provides guiding principles to promote CPRE's policy on the climate emergency when seeking to influence the planning of solar developments to ensure for thriving and beautiful rural places in the future as we progress to net zero. In the annex, it also offers a summary of the policy context and of CPRE's evidence base to date.

Summary

CPRE seeks better outcomes for rural communities, nature, and local economies as solar development is planned. First, CPRE wishes to see more solar focused on wasted space and it will boldly campaign for this, showing what's possible through examples of how it is being done better elsewhere. Second, as new ground-mounted solar applications come forward, it will seek better outcomes, and in cases where the adverse impacts outweigh the benefits, it will speak out.

Our principles for seeking the best outcomes are:

1. Seek better spatial planning policies
2. Include proper community engagement
3. Identify sustainable locations
4. Avoid irreplaceable habitats
5. Target low quality soil
6. Avoid national landscapes and other sensitive landscapes
7. Ensure a scale of development appropriate to the surroundings
8. Promote good site layout and design
9. Minimise intrusion from site security measures
10. Avoid light pollution
11. Deliver genuine biodiversity net gain
12. Keep public rights of way open
13. Support the local economy
14. Assess cumulative impacts
15. Ensure planning conditions especially for decommissioning
16. Support fair community gain

These guiding principles are supported by the CPRE's new planning guidance on how to respond to planning applications here. The principles are articulated through a series of illustrative case study to consider 'the good, the bad, and the ugly' of solar development.

Note on planning applications

Schemes below 100MW will be decided by the local planning authority via applications and associated documents including a location plan, planning statement and other information such as a design and access statement. Larger scale applications are likely to require an Environmental Impact Assessment. Proposals over 100MW will be decided via the Nationally Significant Infrastructure Project (NSIP) regime, requiring the submission of a Development Consent Order application (at the time of writing, the government is consulting on proposals to speed up the NSIP process, including new flexibilities for ground-mounted solar).

Our principles

The principles apply to both improved spatial planning policy and development management either via a Development Consent Order or application to the local authority.

1. Seek better spatial planning policies

CPRE should seek better planning policy at the national, strategic and local levels along the lines of the guiding principles so ground mounted solar is steered to sustainable locations in consensus with rural communities.

2. Include proper community engagement

The National Planning Policy Framework (NPPF) Section 3, paragraph 16, says community involvement should be part of strategic plan making. Paragraph 41 also encourages developers to engage local communities before submitting applications, in site identification, pre-design, conceptual stage, etc via local exhibitions. Applications should provide information on how community views have influenced proposals.

3. Identify sustainable locations

In NPPF paragraph 11, a presumption in favour of sustainable development is set out and CPRE will support sustainable locations for solar development. Footnote 7 sets out protected areas and restrictions such as Green Belt, which serves the important function of keeping land permanently open. Policy on Protecting Green Belt is set out in NPPF Section 13.

Paragraph 130 c) sets out:

"local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."

4. Avoid irreplaceable habitats

The NPPF sets out that development of irreplaceable habitat should be refused, unless there are wholly exceptional reasons (see footnote 70) and a suitable compensation strategy exists (in paragraph 11 footnote 7, 93 b) and in the glossary it is defined as:

"Irreplaceable habitat: Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen."

5. Target low quality soil

High grade agricultural land should be considered as an irreplaceable asset of value for future generations. Ground-mounted solar should be targeted at land with low quality soil. NPPF paragraph 187 sets out:

"Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;"

Best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) should be considered alongside other sustainability considerations, and it is important that a Soil Survey informs decisions. CPRE notes that grade 3b land is also productive pastureland and should be given weight in the planning balance. Consented schemes require conditions for soil management, drainage and site restoration.

6. Avoid national landscapes and other sensitive landscapes

Landscape and Visual Impact Assessment (LVIA) should be used to understand the landscape and visual amenity impacts. Landscapes that are designated for their national significance should be avoided entirely by ground-mounted solar developments, including National Parks and National Landscapes (formerly known as Areas of Outstanding National Beauty). Elsewhere, LVIA are still important to assess the impact on countryside character. Schemes should be integrated within the existing landscape form and avoid sensitive and prominent landscapes. The Landscape Institute's latest guidelines for LVIA and advice of a qualified Chartered Member of the Landscape Institute is recommended.

7. Ensure a scale of development appropriate to the surroundings

Solar farms should be at a scale appropriate to their receiving environment. Large solar developments may not necessarily give rise to worse outcomes than smaller ones but those that cause excessive industrialisation of our most prominent rural landscapes are problematic. CPRE is unlikely to consider proposals appropriate where they would substantially erode rural character, especially where they engulf settlements. This can also happen where clusters of applications arise due to cumulative impacts arising.

8. Promote good site layout and design

A good site layout and design should be encouraged. This includes uniform placement of solar PV equipment, where possible using natural features to screen and lessen the landscape and visual impacts. The location of battery storage next to existing district network substations can also help to reduce development effects.

9. Minimise intrusion from site security measures

Solar farms usually have high security fencing, which will cause intrusion to a rural landscape. CPRE recommends that applicants minimise the use and height of metal security fencing and instead use natural features, such as hedges or other landscaping, to screen security fencing. Pole mounted CCTV facilities and security lighting siting should be carefully considered.

10. Avoid light pollution

Lighting in rural areas can be a form of unwanted pollution. According to NPPF paragraph 198 c, light pollution should be minimised to prevent harm to local amenities, dark landscapes and nature conservation. Whenever possible, lighting of solar schemes should be avoided altogether. Passive infra-red (PIR) technology to minimise glare and impacts on nature, in particular consideration of moths and bats, should be set out in a Lighting Assessment.

11. Deliver genuine biodiversity net gain

Ecological Assessments will need to show a minimum of 10% biodiversity net gain in accordance with Local Nature Recovery Strategies as required by The Environment Act 2021. CPRE calls for existing hedges and established vegetation, including mature trees, to be retained and protected during construction, adhering to the latest British Standard. New planting is welcome as part of enhancement work that adds value to existing habitats or creates new important habitats e.g. cultivated strips for rare arable plants, rough grassland margins, bumble bee plant mixes, wild bird mixes, etc. A buffer strip of larger than five metres between hedges and solar panels is desirable to promote ecological and biodiversity opportunities, if it can be achieved. See BRE guidance here.

12. Keep public rights of way open

CPRE calls for solar farms to be designed to avoid obstructing or closing public rights of way such as footpaths and bridleways. If it is necessary to cross a right of way, developers should provide alternative routes that are clearly marked and well-maintained.

13. Support the local economy

CPRE's policy on farming acknowledges the growing environmental, social and economic pressures that farmers face, and diversification of income via solar energy may support farm viability. According to the BRE good practice, to allow for grazing, solar panels should be typically installed at a height of 800-900mm above ground level. Rural renewable energy sites have the potential to provide multiple benefits and improve the viability of local communities beyond the site boundary.

14. Assess cumulative impacts

The Renewable Energy Planning Database | DESNZ & Barbour ABI is a valuable mapping tool for tracking solar developments of different sizes and planning stages. In respect of ground-mounted solar PV installations, it is helpful for assessing cumulative impacts.

15. Ensure planning conditions especially for decommissioning

Approvals should be subject to relevant planning conditions. Conditions include and are not limited to: Construction Management Plan; Operation and Maintenance Plan; Landscape and Ecological Management Plan; a Restoration Condition to return sites to an improved environmental condition with bonds; and importantly that it is not considered previously developed.

16. Support fair community gain

CPRE is likely to support solar developments that are genuinely 'community-led' or 'community-supported'. We progressed research for 'Community Energy Visioning – showcasing renewables done well - CPRE'. Developer contributions of wider community benefit are preferrable to individual households and could include improvements to local combined power and heating systems, community infrastructure, such as to the village hall or play equipment in the local park.

Annex – policy context and evidence base

CPRE position on solar development

In support of the transition to a net-zero energy system our priority campaign ask is for as much of government's target of 85GW of solar energy by 2050 as possible to be derived from rooftop first solar, along with other underused space such as brownfield land and car park canopies. Thereafter, it seeks better outcomes for rural communities, nature, and local economies through ground-mounted solar. Local CPREs may speak up for positive solar developments or speak out against solar proposals they consider overwhelmingly harmful.

Government mission for clean energy 2030

The government's clean energy mission progresses past efforts to achieve a net-zero energy and importantly to fulfil the UK's legally binding commitments. The National Energy System Operator (NESO), in its Clean Power 2030 report, highlighted the important role of solar energy and set interim targets of 47GW by 2030 and 70GW by 2035.

CPRE support for decarbonisation

CPRE's report, Building on our food security, July 2022, set out that the climate crisis poses the biggest threat to the countryside, with 60% of our finest farmland at risk of flooding and hampering the growing of food. Our joint report, Electric Dreams, with the Aldersgate Group and RenewableUK, urged the government to reform the UK's planning system so that our beautiful natural landscapes are safeguarded, while ensuring local communities have a real voice in shaping their energy future.

Rooftop first priority – CPRE's evidence base

CPRE's Shout from the rooftops report, presented the UCL research we commissioned which showed that, in the short term, some ground-mounted solar projects are needed to keep decarbonisation on track, but overall a lower proportion of the 85GW target should be focused on the ground. This is because sufficient alternative space from rooftops, brownfield land and car parks, or 'wasted space' exists to install 117GW of solar PV by 2050. A new homes and buildings standard should require solar PV installation, and existing buildings should be retrofitted, particularly large warehouses, to quickly achieve net zero goals. Developing a national rooftop solar target for at least 60% by 2035, equal to 40GW to 50GW, from solar PVs on wasted space is important.

The Lighting the Way report, April 2024, for which we commissioned WPI economics to deliver, offered solutions to government on how to increase the take up of solar on such wasted space. It shows good examples of governments in Germany, China, Japan, Italy and Poland achieving more rooftop solar than the UK. In France, for instance, car park canopies are going to be utilised for solar PV. Financial commitments, purchasing agreements, aggregate opportunities, mandatory requirements and better planning help support a faster roll out of solar energy benefits.

CPRE groups in the North West of England released a report in June 2024 called Harvesting the sun: Increasing rooftop solar in the North West. The report highlights a slow take up of

solar PV despite sufficient sunlight, and plenty of unused rooftop space and vacant previously developed land. The potential to create 100,000 new jobs was evidenced.

CPRE Hampshire and CPRE Sussex, alongside the University of Southampton, published Getting solar off the ground, October 2024. They usefully mapped building roofspace with a total capacity for 40 to 50GW of solar on building rooftops and car parks. This is something all groups in CPRE's network could do to help encourage their authority to do more.

East of England groups wrote a comprehensive report on grid transmission in the Greening the Great Grid Update report. It shows a lack of joined up thinking on energy infrastructure planning as offshore wind, mega solar farms, and a new line of pylons from Norwich to Tilbury, have a scarring impact on the landscape.

Collectively, the CPRE research makes a convincing case of the merits of using wasted space and holding a rooftop first position, but it is accepted that some solar on the ground is needed to keep progress to net zero on track by 2050.

YouGov polling

CPRE commissioned YouGov polling in June 2024 showed that 82% of people support all new homes and commercial buildings being fitted with rooftop solar panels, 89% for Labour voters.

Sunshine Bill

CPRE backed the Sunshine Bill, a private members bill of Max Wilkinson MP, which called for solar PV to be required on new homes in January 2025. More than 10,000 of our supporters contacted their local MP calling for support. Housing Minister, Matt Pennycook, said at the debate that the government was committed to introducing a New Homes Standard by the end of the year, saying 'solar energy has an integral role to play in improving the energy efficiency and reducing the carbon emissions of new homes. CPRE must hold the Minister to his words.