The countryside charity
Hertfordshire

CPRE HERTFORDSHIRE POLICY STATEMENT ON SOLAR ENERGY INSTALLATIONS IN THE COUNTRYSIDE

September 2021

'Meeting our energy goals should not be used to justify the wrong development in the wrong location and this includes the use of high-quality land. Protecting the global environment is not an excuse to trash the local environment.' (Ministerial statement, 2015)
https://questions-statements.parliament.uk/written-statements/detail/2015-03-25/HCWS488

1. BACKGROUND AND PURPOSE

1.1 The need for a policy statement on large ground-level solar energy installations and associated battery energy storage systems (BESS) in rural areas arises due to the increasing number of planning applications being made throughout Hertfordshire on open countryside, much of which is designated as Green Belt, Area of Outstanding Natural Beauty (AONB) and within the Local Plan as Rural Area Beyond the Green Belt. CPRE Hertfordshire (CPREH) makes representations on planning applications in line with its objectives to protect the countryside and rural life and increasingly rural communities are concerned about the potential damage caused by large-scale solar energy installations.

1.2 This paper identifies the nature and scope of the issues relating to solar energy installations in rural areas. It recommends reasoned policy positions with justification to assist individuals and communities in making representations to local planning authorities (LPAs) regarding planning applications for the inappropriate development of ground-level solar energy installations.

1.3 How solar energy development proposals are handled in the planning system depends on their installed capacity. Those up to 50 Megawatts (MW) (typically up to approximately 100 hectares (250 acres) in area) are determined by LPAs, guided by the National Planning Policy Framework (NPPF), the Planning Practice Guidance (PPG) on Renewable and Low Carbon Energy, and Local Plans: those over 50MW are determined by the Secretary of State, guided by national policy statements on energy infrastructure.

2. ISSUES

2.1 Relevant issues are identified and policy recommendations made under the following headings:

- Need for sustainable energy
- Solar energy options
- Ground-mounted solar energy installations
- Agricultural land
- Landscape and visual impact
- Wildlife
- Manufacture and decommissioning
- Fire hazard
- Reinstatement
- Community provision

Need for sustainable energy

2.2 The Government is committed to achieving net zero emissions by 2050 which requires a fundamental change in our sources of energy including the generation of electricity. Certain renewable energy sources, if not properly controlled, can have serious consequences for our natural environment, as alluded to in the Ministerial Statement above.

2.3 The National Planning Policy Framework (NPPF) emphasises the need to increase the use and supply of renewable and low carbon energy, and states that LPAs should maximise development of this energy while ensuring adverse impacts are addressed satisfactorily. Planning Practice Guidance (PPG) on "Renewable and low carbon energy" highlights that the need for renewable energy does not automatically override local environmental protections and the planning concerns of local communities.

Solar energy options

2.4 Cumulatively, photo-voltaic (PV) panels can make a significant contribution to our electricity supply and much more should be done at the planning application stage to ensure that appropriate roof-top panels are built-in to existing and proposed large commercial and agricultural buildings, as well as on public and community buildings. Large scale ground-level installations however require much more careful consideration.

2.5 The Government has estimated that there are currently 250,000 hectares (approx. 625,000 acres) of south-facing commercial roofs in the UK (Part 2 of the Government's UK Solar PV Strategy). CPRE Hertfordshire recognises that PV for buildings is the area where the most rapid technological advances, such as thin-film PV and PV tiling, are being made which provide more efficient roof-top energy generation.

2.6 Roof-top PV associated with buildings has the added benefit of providing generation at the point of use, thereby reducing transmission and distribution losses, and the impact of associated infrastructure. Local authorities can support roof-top PV generation through planning conditions to mandate it on new build and major refurbishments, where practicable.

Ground-mounted solar energy installations

2.7 Solar 'farms' use ground-mounted solar PV panels to generate electricity. Sites are often surrounded by security fencing, and may have security lighting and CCTV. They will also include prominent overhead power line infrastructure to connect to the grid and a proliferation of low level buildings and connections to the grid and battery storage.

2.8 They can cover large areas of land, up to 100 hectares (approx. 250 acres) or more, usually in rural locations. Approximately five acres of land is required for every megawatt (MW) of installed capacity and it is essential that the siting, design and landscaping of solar energy installations avoid adverse impacts on the countryside.

Agricultural land

2.9 Central Government has shown limited support for industrial scale land-based installations, and national planning guidance indicates a strong presumption against such development on the 'best and most versatile farmland' (classified as Grades 1,2 and 3A). Similarly, the Building Research Establishment (BRE) 'Planning Guidance for the Development of Large Scale Ground Mounted Solar PV Systems' notes that national planning policy would not support development on the best

agricultural land and specifically states that "the best quality land should be used for agricultural purposes".

2.10 The Agriculture Act 2020 is to be applauded for its switch from Basic Payments to farmers to an Environmental Land Management scheme which incentivises environmental stewardship schemes such as tree planting and the creation of traditional habitats and ecosystems. It is clear however that it is not intended that the scheme should apply to high-value agricultural land 'in recognition of the importance of food production'.

2.11 This indicates that the Government recognizes the importance of reserving the best land for growing food. It is not considered acceptable for local planning authorities and appeal inspectors to allow this land to be taken out of food production for the purpose of providing energy. It is wasteful and unnecessary when many other non-productive opportunities exist for solar energy operations.

2.12 Energy companies cite that a particular area is dominated by land in the 'best and most versatile' category and they have no alternative option. They do, and should develop in other areas of the country where land is less productive or, better still, concentrate on brownfield sites. The occasional grazing of sheep is also suggested as a continuing agricultural use by way of compensation but this is not significant when compared to the productivity of high grade arable land, nor generally practised.

Landscape and visual impact

2.13 The loss of high quality farmland is not the only issue. Arguably of equal importance is the potential harm that these developments cause to the landscape.

2.14 Fields containing continuous rows of metal and glass bring a dramatic industrial scar to an otherwise rural environment which is further damaged by perimeter security fencing, floodlighting, CCTV systems, overhead line infrastructure and buildings housing associated apparatus including the battery storage units. The scale and appearance of ground-mounted solar installations are usually obtrusive on the landscape, generally being large, geometric and industrial in character, and causing considerable sun glare from the panels.

2.15 Local planning authorities should have policies in place to ensure that important landscapes are not compromised, particularly with regard to 'designated' and 'valued' landscapes such as Green Belt, Areas of Outstanding Natural Beauty (AONB) and Rural Area Beyond the Green Belt (RABGB). Traditional views, often framing the setting of historic buildings, are destroyed and the character of footpaths is altered for ever with the most unsuitable sites being on sloping land highly visible from the surrounding landscapes.

Wildlife

2.16 Taking land out of agricultural use can have benefits for wildlife in those cases where the monoculture of crops is removed, allowing an element of bio-diversity. The absence of ploughing increases the earth worm population and insects flourish where grass is left to grow but these advantages are compromised by the damage to traditional habitats through development of the industrial plant and infrastructure associated with solar energy generation.

2.17 Security fencing surrounding large areas of land removes traditional pathways for transitory animals and bird deaths are a common occurrence as large areas of glazing are mistaken for water. Grass has to be mown and the land is essentially changed from rural to industrial use; chemicals are used to control weeds and pests and habitats and the nature of local wildlife is consequently altered.

2.18 A further concern is the potential impact on the quality of the soil. Large areas of solar panels will change the way that rainwater falls on the ground, air currents will change and large areas will be permanently shaded from sunlight.

2.19 The earth is our biggest carbon store. It is unknown what impact these environmental changes will have on its ability to continue to store carbon and could potentially be a counter-productive feature in the battle to reverse climate change.

2.20 Large solar energy installations destroy wildlife corridors and nesting and feeding habitats, especially of ground nesting birds such as the Stone Curlew and Lapwings as well as on the hunting grounds for Marsh Harriers, Buzzards and Barn Owls. Once gone such habitats cannot be easily recovered and removing or attempting to relocate these established habitats has disastrous consequences for the species within them.

Manufacturing and decommissioning

2.21 Considerable amounts of energy and material such as rare earths are required for the manufacture of photo-voltaic panels and batteries, predominantly in China. These issues, together with transport costs and impacts should be considered as part of the wider environmental impact of solar energy installations.

2.22 Solar panels degrade slightly each year and so become inherently less efficient. After 30 to 40 years of operating life, they will produce a small fraction of the original output, and the scheme will become uneconomic well before the end of the proposed period. Similar issues relate to battery operation.

2.23 As solar energy companies usually lease their sites for periods of between 25 and 40 years it is highly likely that the PV panels will become redundant before the expiry of the lease term. It is probable that more efficient sources of electricity will make the panels obsolete and much of the land will no longer be required.

2.24 Decommissioning of solar energy sites at the end of their useful life (generally quoted as 35 to 40 years but likely to be much less as technology progresses) also poses several issues which should be taken into account. Applicants rarely provide information on how panels and batteries will be recycled or how numerous tonnes of toxic waste will be disposed of without being a legacy for future generations and this should be a requirement of any planning application.

Fire hazard

2.25 A specific concern is the potential fire hazard caused by associated infrastructure facilities for solar energy generation. Battery Energy Storage Systems (BESS) are intrinsic elements of large solar installations and use lithium-ion batteries that require specialist treatment in the event of fire that are not available to Hertfordshire Fire and Rescue.

2.26 Such fires do not need oxygen, are extremely difficult to extinguish, and generate highly noxious fumes. The rural locations of this infrastructure also present challenges for fire control which need to be taken into account.

Reinstatement

2.27 Energy companies generally accept a reinstatement clause in the lease granted but there is concern that such a liability so far into the future may be worthless. Where PV panels have become obsolete it is likely that the operating company will have ceased to exist, and in that case, and where any

bond is worthless or inadequate, there will be uncertainty as to whether the landowner will finance and undertake any reinstatement.

2.28 There is considerable uncertainty as to whether these sites will ever be returned to agriculture or to a natural state. The cost of de-commissioning and re-cycling will outweigh the value of what is created leaving an abandoned and derelict site. Such sites could then be classified as 'brownfield' with pressure to redevelop for housing despite their often unsustainable location.

Community provision

2.29 Solar energy generation should be an integral part of existing and all new house and commercial property construction as an alternative to ground-mounted installations. The Solar Trade Association states that there are 617,000 acres of south-facing commercial roof-tops that are not yet being utilised in the UK for solar power.

2.30 This could provide 50% of the UK's electricity need and provision should be focussed (in line with Government guidelines) on brownfield sites or areas where it will have limited impact on communities and the natural environment. CPREH encourages community-led and owned projects, provided they adhere to the principles and approach set out in this statement.

2.31 CPREH has concerns about developers offering "goodwill" payments to communities, which can bring the planning system into disrepute. Nor is it good public policy to secure the support of the immediate community through such one-off payments when developments potentially affect a landscape enjoyed by a much wider population, including future generations.

3. POLICIES

3.1 The following policy statements and justifications reflect the concerns of CPREH and can be used in making representations on planning applications, and in discussions with providers and other bodies involved in such developments.

Policy 1: Agricultural land

The use of 'best and most versatile' agricultural land (Grades 1, 2 and 3a) for large ground-mounted solar installations should be avoided in all circumstances.

3.2 CPREH believes that high-quality agricultural land (Grades 1, 2 and 3a), specifically protected in the National Planning Policy Framework (NPPF), should not be used for solar energy generation. This reflects the growing importance of food security and there may also be a case for protecting Grade 3b or other land that makes an important contribution to the local land-based economy, particularly in areas dominated by low grade agricultural land.

3.3 CPREH recognises that solar energy installations may increase farm incomes in areas of marginal farming but higher grades of agricultural land are usually arable so the availability of land within a solar installation for grazing should not be used to justify the loss of such valuable land. CPREH believes robust research and evidence on the effect of solar installations on the productivity of existing grazing land is needed.

Policy 2: Brownfield use

The redevelopment of brownfield and previously developed sites for roof-top solar energy generation should be encouraged.

3.4 Where brownfield land is suitably located for housing, roof-top solar energy generation should be integrated. Planning conditions should require the inclusion of roof-top PV panels in the specification of new commercial developments and, where appropriate (not in Conservation Areas or similarly sensitive settings), new housing schemes.

Policy 3: Landscape

Applications relating to proposed large solar installations in rural areas should be accompanied by a comprehensive landscape impact appraisal, and development which results in the loss, or change in character, of landscapes or landscape setting and views should be refused.

3.5 Solar installations should not adversely affect the character of the landscape, nor should their siting necessitate the removal of characteristic landscape features such as hedgerows, trees and copses. They should be located to ensure minimum visibility in the wider landscape, taking advantage of local topography and natural vegetation.

3.6 Visual impacts are likely to be greater in hilly and undulating areas and less so in flatter areas where overlooking is less easy. Screening by vegetation can be seasonal and may not be in place for the lifetime of the scheme; new planting should take this into account and should be effective from the outset of the scheme.

Policy 4: Cumulative impact

Planning decisions should take account of the cumulative impacts on landscape character and quality of multiple installations.

3.7 Landscape harm arises from the cumulative impact of multiple schemes that in combination can change the character of the countryside. CPREH believes that assessment of cumulative impacts should take account of multiple solar energy installations, including smaller PV developments, associated BESS and additional increments on existing solar energy installations.

3.8 It should also consider other energy infrastructure such as wind turbines visible in the landscape, taking account of simultaneous visibility and sequential effects on visibility. CPREH believes that a broader approach to cumulative impacts should be required by LPAs to ensure that cumulative effects are adequately taken into account.

Policy 5: Protected areas

Ground-mounted solar energy installations should not be permitted in designated protected areas such as Green Belt, Areas of Outstanding Natural Beauty (AONB) and Rural Areas Beyond the Green Belt.

3.9 Proposals will need to demonstrate that they will not compromise the special qualities of these designated areas. They should not harm the purposes of Green Belts or reduce their openness, nor should they be permitted on, or cause damage to Sites of Special Scientific Interest (SSSIs) or adversely impact on Scheduled Ancient Monuments, nationally or locally listed buildings, Conservation Areas, Registered Parks and Gardens, or locally valued landscapes and non-designated heritage assets defined in Local Plans and Neighbourhood Plans.

Policy 6: Public and residential amenity

Proposals should avoid harm to views from publicly accessible land and the surroundings of settlements and applications that result in the significant change in character of footpaths or other public rights of way should be refused.

3.10 Security fencing around solar farms can be visually intrusive, particularly at close quarters, especially where footpaths cross fields and it is proposed to provide security fencing to either side. Solar farms should not be sited where they are directly overlooked by housing or where they would detract from important views.

3.11 A full land management plan should accompany all applications providing detailed information on the way in which the land will be maintained (grass cutting regimes; any use of pesticides and insecticides; animal grazing proposals etc) and related conditions should be applied to any permissions granted.

Policy 7: Biodiversity and wildlife

Solar installations should avoid adverse effects on biodiversity and wildlife and deliver positive biodiversity gains.

3.12 Large-scale proposals including overheard power line infrastructure can impact detrimentally on biodiversity and wildlife, for example, covering bat foraging areas, preventing the movement of animals and restricting wildlife corridors. A wildlife impact assessment should be required and any loss or changes to habitats should be properly mitigated.

3.13 There may be opportunities to increase biodiversity through planting suitable hedgerows and increasing native wild flowers which, amongst other things, may increase habitat for pollinating insects. Any proposed new tree or hedgerow schemes should require native species plants to ensure effective screening at the earliest possible date.

3.14 A reinstatement plan which identifies all of the key elements required to return the land to its original or approved alternative state should be prepared and form a part of any planning application. This should provide details (related to best current practice) of the work required, the opportunities for recycling and an estimate of current cost.

3.15 In all cases a bond should be provided as part of a legal obligation between the landowner and the local planning authority to cover the full cost of decommissioning and proper reinstatement, to be entered into upon commencement of any works.

Chris Berry
Planning Manager
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CPRE Hertfordshire
31a Church Street
Welwyn
HERTS AL6 9LW
www.cpreherts.org.uk
office@cpreherts.org.uk
01438 717587