

Carbon Neutral Cambridge response to consultation on Sunnica Energy Farm Development Consent Order



<https://sunnica.co.uk/>

Carbon Neutral Cambridge strongly supports the principle of increased provision of renewable power, including wind, solar and energy storage, alongside reductions in consumption and increased energy efficiency. This is vital to avert a climate catastrophe.

However large scale installations must be done right.

The proposed scheme

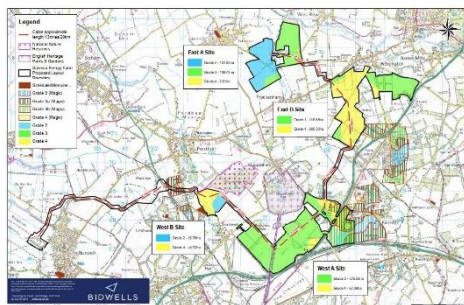
We have to oppose the Sunnica scheme as currently proposed, unless changes are made, and the **LEGALLY BINDING OBLIGATIONS** below are imposed to enforce these

Although it was disgracefully difficult to discover the size of the scheme from the official consultation documents provided by Sunnica, the proposed scheme will be the largest scheme in the UK: The owner's website claims it is 500MW ¹ It covers a massive area ².

We believe this is too big, and that a number of locally led smaller schemes would fit more naturally into the landscape, with reduced adverse impacts on the community.

The maps below show the proposed solar farm beside a map of Cambridge to the same scale. The land is largely grade 3: 'good to moderate' quality (shown in green) and grade 4: 'poor' quality (shown in yellow), with some grade 2: 'very good' quality (shown in blue) primarily near Isleham.

Appendix 2 – ALC land classification within Sunnica Scheme



Sunnica's approach to community engagement and consultation has been disgracefully poor.

Their underlying business model implies that the scheme may well change ownership several times during the lifetime of the project, while Sunnica merely manage it, ^{3 4 5 6}

Given this business model and behaviour to date, we would only support the Sunnica scheme if the following obligations are made legally enforceable



Image from PS Renewables' (Sunnica's parent company) 5MW Blay Farm project

Legally binding obligations

These obligations should include the following

Appropriate land use

- No use of grade 1 'excellent quality' or grade 2 'very good' agricultural land
- If good quality Grade 3 agricultural land is to be used, the priority must be to manage it for agro-voltaics⁷, ie a dual use agriculture (typically vegetable growing or sheep) and energy production. This will require the involvement of real farming expertise, so should only be permitted if there is evidence of the involvement of a keen landowner/farmer.
- Panels allowed on moderate quality grade 3 and poor quality 4 agricultural land unless the site is a valuable habitat for priority species such as stone curlew.

Biodiversity gain and minimisation of visual impact

- Appropriate height woodland/hedging to be planted around the sites, to reduce the visual impact of the sites and help meet national targets for woodland creation and biodiversity.
- 25% of site to be allocated and managed to improve habitats, biodiversity and carbon sequestration, aiming for at least 20% biodiversity net gain over the whole development using a recognised biodiversity metric (such as the Warwickshire Biodiversity Impact Assessment calculator)
- Remainder of the site to be managed to steadily improve net soil health, in preparation for when/if the land is returned for agricultural use.
- Land management regimes put in place, with the necessary expertise and monitoring to deliver on "promises of biodiversity net gain."

Financial benefit for community

- As the proposed scheme is the UK's largest, at over 500MW solar, plus revenue from grid balancing services, the financial benefits to the community must also be very substantial. For example, new Scottish renewables projects are required to provide a package of community benefits with a value equivalent to at least £5k/MW/yr⁸ rising with inflation for the life of the project. For a 500MW scheme, this would result in **payments of at least £2.5Million pa to the local community, increasing with inflation for the life of the project.**
- This could do a lot to improve the local quality of life and sustainability. For example, funding the creation of safe cycling routes to schools and public transport hubs, or providing grants to improve the energy efficiency of people's homes.

Our support for well designed large scale Solar installations

We would support large scale solar installations where they are based on the following principles:

- Genuine community engagement.
- Financial benefits for the community.
- Encouraging dual use of land, i.e. combining energy production with infrastructure, agriculture, biodiversity and/or the improvement of soil health



National overview

From a National Infrastructure point of view, it is sensible to site renewables in a range of locations across the country, in order improve continuity of supply. The East of England is quite a good location for photo-voltaic solar (PV) because it's relatively sunny, while proximity to the national transmission grid at Burwell Substation reduces costs and losses. However, much of the land is excellent quality agricultural land, so it must be used well.

We support the principle of providing energy storage and grid balancing services (ie batteries) as this will be a vital part of a decarbonised electricity supply.

However, site selection is critical. For Photovoltaics (PV), the first choice must be to site panels on existing buildings.

Although ground mounted installations are usually cheaper and can be much larger, these should in principle only be on lower value land, or dual use.

Dual use for agriculture and energy (eg Agro-voltaics) should be encouraged, and where land is removed from agricultural use, operators should be required to take measures to improve the quality of the land while its being used for energy generation. We believe that excellent quality (grade 1) agricultural land, which is nationally important and predominantly in the Fens⁹ and very good (grade 2) land should always be retained solely for agriculture.

Dual use of land in large scale Solar

The top priority is for the majority of UK buildings to have PV. This maximises transmission efficiency, reduces the demand on National Grid, optimises the use of land and encourages the occupants to optimise their use of PV.

However where ground mounted PV installations are a necessary part of decarbonising the UK's electricity supply, these must either be on land that's of low value for both agriculture and priority habitats, or managed for dual use: ie Energy and Habitats, or Energy and Agriculture

These options for Dual Use with agriculture or habitats are discussed below.

Dual agricultural and energy use, known as Agro-voltaics (also agri-voltaics)

Agro-voltaics¹⁰¹¹¹² is a relatively new combination of agriculture (typically vegetable growing, sheep or poultry) and ground mounted panels. It is being used in USA, Japan, China, South Korea, India, Malaysia, Vietnam, Austria, Italy and France, while the UKRI is already funding innovation¹³ in agro-voltaics in Cambridgeshire.



A variety of approaches are being used. These are very site specific, but typically, these benefit agriculture (because some shading by the panels reduces crop overheating and water use) while the efficiency of the panels is improved by up to 10% (because cooling induced by transpiration by the crops improves PV efficiency). To enable this the panels are typically at a wider spacing than normal and may be mounted higher than normal in order to allow workforce and machinery to move underneath. Although solar output maybe slightly lower, overall productivity can be improved¹⁴.

Research suggests that for success, agro-voltaic projects need to have agriculture at their heart.

Cambridgeshire is the UK's most important region for growing vegetables, but productivity is under threat: Cambridge has already seen the highest UK temperatures (38.7C in 2019), water supplies are already dangerously depleted, and soils are degrading. Climate change will make this worse, so innovative approaches are important.

We suspect Solar Farm operators are unlikely to embrace an agro-voltaic approach unless it is made a legally binding obligation. Where the land quality permits it, we would like to see this made a requirement of planning permission, along with evidence of the involvement of a skilled and engaged farmer.

This would promote UK focussed innovation in this nationally important area.

Improving Biodiversity, natural habitats, soil health, carbon sequestration and woodland

In most solar farms, the biodiversity benefits go no further than nice pictures of wild-flowers on the website, while on-site, plant growth is vigorously suppressed with herbicides, mowing and even gravel. However, organisations such as Wiltshire Wildlife Trusts and RSPB are showing what can be done, when the project has biodiversity enhancement at its heart ^{15 16 17}

Taking land out of intensive agriculture for a period offers a substantial opportunity to rebuild soil health, sequester carbon, increase biodiversity and improve natural habitats. Although we are not experts in biodiversity, we would like to see a legally binding obligation on solar farm operators to significantly improve biodiversity and habitats, where the land is appropriate for this.



Cambridgeshire is the least wooded county in the country¹⁸, so thick hedges and appropriate height trees should be planted round the edges of the scheme and in areas not used by the panels. This will help improve biodiversity, sequester carbon and reduce the visual impact of the huge scheme on the local community.

Experience shows that although most local solar farms have over-promised and under-delivered on habitat creation, these approaches yield good results when done with conservation or agricultural production at heart.

References

- ¹ <https://psrenewables.com/plans-emerge-500mw-solar-storage-site-uk/>
- ² <https://www.eastcambs.gov.uk/sites/default/files/Appendix%204%20-%20Representation%20from%20SNTS%20Community%20Action%20Group%20AoCR%2028Nov21%20rev1.pdf>
- ³ <https://www.eastcambs.gov.uk/sites/default/files/Appendix%204%20-%20Representation%20from%20SNTS%20Community%20Action%20Group%20AoCR%2028Nov21%20rev1.pdf>
- ⁴ <https://psrenewables.com/plans-emerge-500mw-solar-storage-site-uk/>
- ⁵ <https://psrenewables.com/investors/>
- ⁶ <https://psrenewables.com/landowners/>
- ⁷ <https://www.goodenergy.co.uk/media/1096/delabole-solar.pdf>
- ⁸ <https://localenergy.scot/community-benefits-map/>
- ⁹ <http://publications.naturalengland.org.uk/publication/127056?category=5954148537204736>
- ¹⁰ <https://www.goodenergy.co.uk/media/1096/delabole-solar.pdf>
- ¹¹ https://www.goodnewsnetwork.org/agrivoltaics-of-solar-power-and-farming-are-a-big-success-on-this-boulder-farm/#.YZhUa_S2n_E.reddit
- ¹² <https://www.foodsafetynews.com/2021/03/agrivoltaics-scores-impressive-triple-win-but-some-food-safety-concerns-remain/>
- ¹³ <https://www.ukri.org/wp-content/uploads/2021/10/IUK-191021-Transforming-Food-Production-Winners-List.pdf>
- ¹⁴ <https://m.youtube.com/watch?v=2ue53mBUtNY>
- ¹⁵ <https://www.wwce.org/land-management>
- ¹⁶ <https://anesco.co.uk/anesco-and-rspb-shine-light-on-solar-farm-biodiversity-2/>
- ¹⁷ <https://www.rspb.org.uk/our-work/policy-insight/climate-change/action-to-tackle-climate-change/uk-energy-policy/solar-power/>
- ¹⁸ <https://twitter.com/woodlandtrust/status/1106482691866791936>