Berkshire Buckinghamshire & Oxfordshire Wildlife Trust

The Lodge
1 Armstrong Road
Littlemore
OXFORD
OX4 4XT

8th August 2022

James Kirkham,
Cherwell District Council

By e-mail only

Dear James,

22/01682/F

Land North Of Manor Farm Noke

Development of a ground mounted solar farm incorporating the installation of solar PV panels, associated infrastructure and access, as well as landscape planting and designated ecological enhancement areas.

We have the following comments on this application. As a wildlife conservation organisation, our comments refer specifically to potential impacts on wild species and habitats which may occur as a result of the proposal.

Whilst we recognise that there is a need for renewable energy, and that work has gone into the design with the intention to create wildlife habitat as a result of this proposal, we consider that the risks of severe impact on the wildlife populations of the Otmoor LWS/RSPB bird reserve are sufficiently high that this proposal should not go ahead in this location. We set out in more detail why we are objecting to this proposal.

Objection

Potential for serious impact on Otmoor Local Wildlife Site/RSPB reserve and Otmoor SSSI through impact on some of the species that use the sites.

The Otmoor Local Wildlife Site (LWS)/Otmoor RSPB bird reserve is probably the best site for birds in the entire county of Oxfordshire, as well as being exceptionally rich for many other groups of wildlife. It provides breeding habitat for numerous species of wading birds, for some of which it is one of only a few remaining breeding sites for them in Buckinghamshire and Oxfordshire. Breeding waders at Otmoor include redshank, snipe, lapwing and curlew, and little ringed plover. It is also of immense importance for both breeding and wintering wildfowl, including very large winter gatherings of ducks. It provides breeding habitat for a number of birds that rely on the hedgerows and scrub, including numerous warbler species, and the rare and rapidly declining turtle dove.

In winter, Otmoor provides a vitally important roosting site to vast numbers of starlings, and we have heard figures of there being upwards to 50,000 birds roosting there. Starlings are a red listed Bird of Conservation Concern and a UK priority species (or species of principal importance). As well as being of vital importance to the starling, the murmurations that the starlings perform prior to roosting provide what is considered by many to be the greatest wildlife spectacle of the county of Oxfordshire. The murmuration is of great importance to many people in Oxfordshire and beyond who visit to witness this wonder of nature, and presumably make a measurable positive impact on the local economy in the process. The site is also home to numerous other wildlife groups, in good numbers and including a number of rarities. Clean water ditches supporting freshwater invertebrates, and a range of other flora and fauna can be found.

The Otmoor Basin is designated a Local Wildlife Site in parts, and a SSSI in other parts. It is quite simply one of the most important sites for wildlife in Oxfordshire, and many of the species that make it such are of the type that may be vulnerable to impact from a large solar farm being placed in close proximity. The proposed solar panels lie only 350m from Otmoor LWS/RSPB bird reserve; 1000m from the reedbed where the starlings roost; and only 1820m from the SSSI.

The Natural England report: "Evidence review of the impact of solar farms on birds, bats and general ecology" (which is available here: http://publications.naturalengland.org.uk/publication/6384664523046912) states (with our underlining):

"When considering site selection for utility scale solar developments it is generally agreed that protected areas should be avoided. This is reflected in the scientific literature where modelling approaches include many factors such as economic considerations and visual impact but also often avoid protected areas such as SPAs. This is echoed by organisations such as Natural England and the RSPB that recommend that solar PV developments should not be built on or near protected areas."

A report written by BSG Ecology (*Potential ecological impacts of ground-mounted photovoltaic solar panels - An introduction and literature review – 2019*) states:

"2.56 Publications by Natural England recommend the avoidance of solar developments in or near to areas of high ecological value or designated sites, and highlight how planning applications can often be rejected based on the ecology of the proposed site."

and a Natural England information note (*Natural England Technical Information Note TIN101 Solar parks: maximising environmental benefits*) states:

"Solar parks can affect wildlife where they are near sites of high wildlife value…..There are some indications that very large, unbroken expanses of uniform solar panels may mimic water surfaces on which insects may attempt to settle and breed……..Some birds and invertebrates are also likely to be affected by solar parks developed close to areas of high wildlife value. Where a solar park is proposed within or close to such sensitive sites, the

planning application should include a detailed assessment of the likely impacts on the ecological interest of the sites and contain practical measures which avoid or minimise any adverse effects on their features of interest. Any solar park close to a designated site will need to demonstrate that it would not compromise the objectives of the designation."

We do not have the resource to go into detail regarding possible impacts of solar farms on wildlife. Possible impacts that have been suggested include:

a) the "lake effect" whereby birds mistake a large area of solar panels to be a lake and attempt to land on them. For some water birds this could be critical since they struggle or are unable to take off from non-water surfaces;
b) birds and bats that feed on the wing mistakenly attempting to feed from the panels, with possible collisions;
c) low-flying birds colliding with the panels or being confused by reflections in the same way as birds are confused by reflections from windows of buildings, and colliding with the panels;
d) attraction of aquatic insects to the panels, the Natural England evidence review stated: *"Photovoltaic panels have been shown to reflect polarised light that is attractive to polarotactic aquatic insects, which confuse solar panels with water and attempt to lay eggs on the surface, resulting in mortality and reproductive failure";* the BSG review mentioned above (*Potential ecological impacts of ground-mounted photovoltaic solar panels - An introduction and literature review – 2019)* describes in paragraphs 2.8 – 2.10 research into the possible impact of solar farms on aquatic invertebrates. It concludes by saying that: "*The authors suggest that, until more research on a variety of species has been carried out, a more sensible approach would be the strategic deployment of solar panels away from water-bodies in temperate regions.*"
e) potential noise or pollution impacts during construction;
f) collision of birds with security fencing.

Many of these possible impacts relate specifically to species that are present at Otmoor. Otmoor has areas of open water so if the possible "lake effect" does occur then it could have a much greater impact in this locality, where birds may use the open water of Otmoor as a geographical cue. The groups of species that are most often mentioned in the literature in relation to concerns over the impact of solar PV panels are birds, particularly water birds, bats, and aquatic invertebrates. Otmoor has exceptional value to birds including water birds, has clean water ditches with diverse aquatic invertebrate populations, and also has diverse bat populations.

The Natural England report: "*Evidence review of the impact of solar farms on birds, bats and general ecology"* states at the end of its Conclusion:

"The lack of evidence available relating to the ecological impact of solar farms is concerning….. more needs to be done to understand the interaction between these new technologies and the ecology that they are ultimately designed to protect."

We consider that there is as yet simply not yet enough evidence that a solar farm can be installed in such close proximity to a wildlife site of such high value without harm being

caused to certain species. We consider that the precautionary principle comes into action, and that this application should not be permitted in this location.

The BSG evidence review mentioned above states in conclusion:

"2.58 In order to minimise the impacts of solar farms on biodiversity, the literature comes to a general consensus that:
a. Consideration should be given to the correct siting of solar farms within the landscape."

In our opinion, locating a solar farm in such close proximity to a site of such high wildlife value does not meet that aim. We consider that the application does not meet the requirements of the following aspects of Policy ESD10:

"Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity;"
Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity"

Mitigation measures

In the event that, despite our objection, the local authority was still minded to approve the application, we consider that it should only consider doing so if the following amendments are made within the application. We consider that these would need to be addressed prior to determination of the application, rather than through conditions:

- Provision of a detailed report on mitigating impact on the Otmoor LWS/RSPB reserve and Otmoor SSSI and the species that use the sites. Such a request is supported by the Natural England Technical Information Note referred to above which states: "*Where a solar park is proposed within or close to such sensitive sites, the planning application should include a detailed assessment of the likely impacts on the ecological interest of the sites and contain practical measures which avoid or minimise any adverse effects on their features of interest. Any solar park close to a designated site will need to demonstrate that it would not compromise the objectives of the designation."*
- Measures to reduce the likelihood of some of the issues referred to in the first section of this response are provided, such as 1) reducing polarised light from the solar panels, and 2) reducing the density of the solar panels, by widening the corridors between the panels, so as to reduce any resemblance to a lake, and the intensity of the polarised light issues. Some measures are set out in the BGS review (*Potential ecological impacts of ground-mounted photovoltaic solar panels - An introduction and literature review – 2019).* There are coating measures available to reduce polarised light from panels, and the affixing of white grid patterns on each panel to break up the reflections from panels to reduce the chance of attraction to

wildlife. Whilst we do not consider that these will remove the risk to wildlife they could reduce the risk.

- A change to the species mix for the main area of grassland so that it provides species-rich wildflower habitat, with the grazing by sheep being managed to maximise wildlife outcomes. This would include varying grazing levels through the year, with grazing removed at appropriate times to maximise the flowering and setting seed of wildflowers, and to allow undisturbed nesting by any ground-nesting birds. Measures such as the removal of hay at an appropriate time of year will also help to increase wildflower species diversity. It is usual practice in our experience for solar farms to introduce wildflower species mix, managed with wildlife in mind, into the grassland around and underneath the panels. There are numerous solar industry reports that promote it as good practice.
  The BSG evidence review mentioned above states:
  "*Recommended practices include the following (BRE, 2014; RSPB, 2014; Esteves, 2016):*
  • Installation / retention of boundary features such as hedgerows, ditches, stone walls, roughgrassland, field margins and scrub.
  • Planting pollen and nectar strips
  • Security fencing – plant growing climbers e.g. honeysuckle, and ensure there is 20-30 m gap between the base of the fence and the ground to allow small wildlife to pass through
  • Grassland habitat – e.g. wildflower meadow and tussocky grassland
  • Controlled grazing by sheep between panels, with a pause in spring and summer to allow vegetation growth
  • Installation of artificial structures such as nest boxes, hibernacula and log piles."

  "Solar Energy UK Natural Capital - Best Practice Guidance - Increasing biodiversity at all stages of a solar farm's lifecycle" (available at https://solarenergyuk.org/resource/natural-capital-best-practice-guidance/ , states:
  "Research from Lancaster University published in December 2021 showed that land on a solar farm managed for wildflowers rather than grass can boost bumblebee numbers by up to four times."

  The covering of a greenfield site by solar panels represents a semi-industrialisation of a rural area of great value for wildlife. We consider it should be a matter of standard practice, as so many solar farms choose to do, to maximise the opportunities for wildlife provided, to compensate for the impact on wildlife of a semi-industrialisation of a green field site.
- The provision of a detailed ecological management plan for all the habitats, both retained and created.
- Measures are taken to compensate for the impact on skylark. The ecological appraisal notes that 6 pairs of skylark are present on site and that they are unlikely to nest amongst the panels. Skylark are a declining species, they are a UK priority species, and a red-listed Bird of Conservation Concern. Therefore we consider the loss of habitat for 6 pairs of breeding skylark to be a serious concern. There are plenty of examples in Cherwell and other areas where compensation for impact on farmland bird priority species has been required, and we consider it should be required in this case.

- A change to the outcome sought by management for the grassland in the north-eastern corner of the site takes place, by changing the intended outcome from a mix of grasses to a wildflower meadow habitat of much greater species diversity. Measures are available to bring about creation of species-rich wildflower grassland on high nutrient substrates.
- The removal of the proposal for tall security fencing. The application includes plans for security fencing 2.1m in height. This is likely to present a significant collision risk to low-flying birds, that would be of particularly high risk in the proposed location bearing in mind the proximity to Otmoor and the fact that birds would be taking off or landing on Otmoor with flight paths that may put some of them at risk from the security fencing. The fencing would also have significant impacts on the movement of some mammal species. We therefore consider that in this location no security fencing should be used.
- The removal of any proposals for lighting. The ecological appraisal states: *"4.19 However it is recommended that the lighting strategy be carefully designed to avoid light shed on the hedgerows or woodlands and on the wider landscape. The lighting within the final development will be security lighting (i.e. movement activated) and not permanently on. This would also apply to the construction phase."* We consider that this measure does not go nearly far enough. We consider the impact of any security lighting on a dark, rural area so close to a site of such high wildlife value to be unacceptable. Lighting can have negative impacts on many species groups, including birds, bats and invertebrates. Whilst it refers to it being movement activated and not permanent it is possible that the lighting could be triggered regularly by wildlife. Therefore we consider that all plans for lighting should be removed, both in the construction phase and the operational phase.
- That the above requested ecological management plan includes hedgerow management. We could not find much detail on hedgerow management. 4.2 of the Ecological Appraisal states *"Landscape buffers to be created include scrub and new hedgerows. These have been designed to reflect the nature of the local area and enhance the value of the Site as a whole for a range of species. Blackthorn has been included as a high proportion of the proposed planting in both scrub and hedgerow creation. This will benefit brown hairstreak and black hairstreak butterflies. The inclusion of this as well as fruiting species will also increase the value of these areas for various farmland birds including turtle dove, especially if this is allowed to become rank and leggy in places."* We consider that a management plan is required, which would include allowing the hedgerow to become rank and leggy in places, since the way this is worded at present does not guarantee it will occur. Where the hedgerow is trimmed (e.g. in areas where it is not allowed to grow rank and leggy), we consider that better outcomes for wildlife will occur if this only occurs on a three-year rotation, and that the hedgerow is trimmed further out from the previous trim on each occasion, so that it can grow outwards and upwards over time. Such management will allow the provision of berry food for birds, and improve the habitat for black and brown hairstreak. We would ask that the management plan should set out such measures. We consider such a request is justified, in order to provide some level of compensation for the semi-industrialisation of a greenfield site.
- We welcome the submission of a net gain assessment. We have concerns over the condition scoring of the grassland proposed in and around the solar panels, post-development, and consider that the scoring would need to be justified. This is scored currently as Fairly Poor condition modified grassland, for both the land around and that which is underneath the panels. Since the arable by default is scored as Poor,

then the use of Fairly Poor, both underneath and around the panels, results in a unit score that indicates that the land on which the panels are put will be of more value to wildlife after the panels are put in place than before, even though only an improved grassland is being seeded and that much of the land will be permanently shaded by the panels. We suggest that this is looked at and either amended or justification provided. However, and as an alternative to that, we would suggest this is best addressed as set out above, by changing the design to include species-rich grassland in the area where the panels are placed, with management aimed at maximising the wildlife outcome.

Yours sincerely,

Neil Rowntree

Neil Rowntree
Senior Biodiversity and Planning Officer (Oxfordshire)