



FRIENDS OF THE GWENT LEVELS

COMMENTS: PARTIAL DISCHARGE OF CONDITIONS LLANWERN FARMERS SOLAR FARM Ref: 25/0237

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FURTHER PARTIAL DISCHARGE OF CONDITION 14 (ECOLOGICAL MONITORING & CONTINGENCY) OF PLANNING PERMISSION 18/1201 FOR ERECTION OF A RENEWABLE ENERGY HUB (49.9MW) AND ASSOCIATED INFRASTRUCTURE AND LANDSCAPING IN RELATION TO YEAR 4

We have read the Ecology Report for year 4 of operation for Llanwern Farmers Solar Scheme.

We advise that there are multiple failures of objectives throughout the report and the request of discharge of conditions should be refused.

We also advise that further contingencies should be imposed swiftly as there are signs of significant deterioration in specific habitats with direct impacts on protected species and failure to execute the actions and some mitigation schemes identified in the LEMP for the 4th consecutive year.

Our findings are as follows:

1. Habitat Surveys

LEMP Objective:

- Grass height to be maintained to prevent shading of panels; Where practicable this will be undertaken with low intensity sheep grazing, rotated around the various field units or by mowing;*
- Grazing/mowing will be stopped or reduced to encourage flowering, leaving some grassland within field margins free to flower and set seed throughout spring – summer.*
- The grasslands beneath the solar panels on Site will be maintained to provide breeding and foraging habitats for invertebrates and birds particularly in the 7-12.5m field margins.*

Findings:

- Grassland habitat identified as having low species richness - dominated by grasses but with a few forbs typical of grazed grassland such as creeping cinquefoil, meadow buttercup and thistles (creeping, marsh and spear).
- Control of thistles with herbicide in Array Area 1 to the detriment of the shrill carder bee have not recovered, and were absent from the solar arrays, damaging foraging for Shrill Carder bee.

- The grassland surrounding the bug hotel in Solar Array Area 2 had been overgrazed, and areas of rank grasses had not been managed over the autumn and thus contained very few wildflowers leaving little food source for the shrill carder bee.
- Grazing/mowing had not been reduced during Spring-Summer to encourage flowering of the field margins, resulting in a lack of wildflowers, at the time of survey.

Conclusion: The findings clearly indicate that the objectives of the LEMP have not been achieved:

- The grassland beneath the panels have deteriorated to low species richness, which affects feeding for species, both from the lack of plantlife and also the insects associated with those plants
- The spear head thistles have not recovered since being treated with pesticide a year ago, damaging feeding for Shrill Carder Bee
- Poor management of important habitats through incorrect and excessive grazing and mowing, impacting upon species richness, thistle and wildflowers, and reducing feeding for Shrill Carder bee.

Clearly the site operator and the landowners are not following the objectives and commitments of the LEMP, which is a serious issue.

Commitments by the ecologist that strict grazing regimes should be followed have been reported frequently in the last 4 year of reporting and are clearly not affective.

We have concerns about the lack of accountability of the landowners to the operations team, resulting in decision about grazing which have led to multiple failures in habitat for protected species.

2. Lapwing Mitigation Scheme

LEMP Objectives:

The goals of the LEMP and Lapwing Management Plan are to promote breeding pairs and to show an increase in lapwing numbers

Findings:

- The 'Lapwing Mitigation Area' was not found to support breeding lapwing in 2024. One lapwing was observed within this area during the June survey
- It was noted that the sward was too short during the March-April surveys, likely due to overgrazing from sheep.
- It was noted that the grassland was considered overall to be too dry to adequately support breeding lapwing.
- The 'Retained Lapwing Area' found a peak count of 17 wintering lapwing during the February visit, with a further 5 lapwing seen in the lower offsite field on the same visit. Three lapwing pairs (six individuals) were seen during the April survey. It is not known if breeding was successful onsite, but there was one record of a lapwing with chicks within the southern adjacent field during the June survey.

- The ecologist confirms that the objective to increase breeding pairs is highly unlikely to be achieved.

Conclusion:

The findings confirm:

- the failure of the lapwing mitigation site to attract breeding lapwing. This confirms our concerns that attempts to redirect lapwing from favoured breeding areas are likely to fail because of the high site fidelity of breeding lapwing.
- the retained lapwing area attracts both wintering birds and breeding pairs unlike the mitigation area which is clearly unattractive to lapwing. The retained area was established for comparison with the mitigation area, and these findings clearly indicate the mitigation scheme has failed.
- the habitat in the lapwing mitigation area was also being over-grazed in periods critical to the lapwing breeding season, showing lack of competence and accountability of the landowners.

We suggest that no contingencies will improve the current situation. Lapwing are clearly favouring their existing breeding sites, and the objectives that lapwing mitigation site will produce an increase in breeding pairs is unachievable and unrealistic.

3. Breeding Crane Mitigation Scheme

Objectives;

Short-term (≤5 years) - Create and manage suitable chick rearing habitat (hay meadows) close to habitat already used.

Monitor activity of nearby breeding cranes on site and the effectiveness of proposed mitigation in LEMP and Common Crane Mitigation Plan.

Findings

No crane were recorded on Site during the 2024 surveys. We are concerned that the ecologist report suggests that the absence of crane is a result of there being no crane elsewhere in Wales. This has no scientific basis - indeed it makes no logical sense - and appears to be an attempt at deflecting blame from the development. The empirical evidence is that there were breeding crane on the site prior to the construction of the solar farm and these crane are no longer there. The presence or absence of crane elsewhere in Wales is irrelevant to this site.

Conclusion:

The findings that the breeding crane have not returned within 4 years of the building of the solar farm confirm that this approach to mitigation has failed.

The disruption from the building of this large solar scheme was clearly sufficient to deter breeding crane from returning to the area.

4. Bats

NOTE: The 2024 Survey has NOT conducted any bat monitoring despite serious concerns about bat feeding activity in each previous survey. This is because bat monitoring in the LEMP was only planned for Years 1 and 3.

However, the report acknowledges the failure of the bat boxes to be occupied by bats, and has identified plans to move bat boxes to new locations attract bats.

Conclusion

This action may temporarily attract bats to the new locations but is highly unlikely to influence bat feeding difficulties around the vast number of solar arrays at Llanwern.

Research has shown that solar panels interfere with bat feeding, and that bat flight path trajectories are significantly altered around solar panels (see Journal Paper Abstract in Appendix 1), which is seen as one of the main causes of the significant reduction in feeding activity levels, i.e. over 90% in most bat species at Llanwern.

There is NO evidence that introducing bat boxes will be able to influence the dramatic drop in feeding activity around solar panels. The bat boxes may attract bats to the area, but if their feeding is impaired then this action is irrelevant.

OVERALL CONCLUSIONS

It is clear that the delivery of the scheme's objectives to improve habitat and support protected species is largely unachievable.

There are no controls in place to prevent over-grazing by sheep between the panels and in the lapwing mitigation area, the use of pesticides has harmed feeding for Shrill Carder bee for over a year and attempts to attract more bats into the area are meaningless if their feeding behaviour is significantly impacted by the presence of the panels. No information is provided about the accountability of the landowners who are making decisions about grazing, whether directly or through sub-letting of land, which introduces even less accountability..

The management plan is dependent upon several layers of local management and delivery, which leads to high risk of failure to deliver the intricate details of the LEMP. This is demonstrated by:

- the solar site owners' failure to recruit an effective operational team to deliver the many actions in the LEMP
- the lack of continuous oversight of the mitigation schemes delivery
- the lack of effective contingency measures
- the dependency on local landowners to amend their practices in line with the LEMP.

These risks are unacceptable and it is now evident that the SSSI is undergoing real damage as a result of the solar installation at Llanwern.

Therefore, we recommend rejection of the application for partial discharge of conditions.

Dr Catherine Linstrum and Dr Diana Callaghan
Co-Chairs, Friends of the Gwent Levels.

Appendix 1: Abstract - peer-reviewed Journal Article describing Impact of solar panels on bat Feeding and Flightpaths.

Insectivorous bats alter their flight and feeding behaviour at ground-mounted solar farms

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Abstract

1. Efforts to mitigate the climate crisis result in a green-green dilemma: the development of renewable energy technology is required worldwide to reduce greenhouse gas emissions but can have negative impacts on biodiversity. Impacts are being documented for wind farms, but effects of solar farms (photovoltaic power stations) on habitat use of vertebrates remain extremely poorly known.
2. Using insectivorous bats as a biological model for high trophic levels, we tested whether the presence of ground-mounted solar farms affected flight and feeding behaviour. We assessed behaviour using three-dimensional flight path reconstruction systems from echolocation calls, via standardised paired sampling of 16 control and 16 solar farm (treatment) sites. We quantified bat flight and feeding behaviour as flight speed, sinuosity of flight trajectories, and the probability of emission of feeding buzzes (acoustic signatures of prey capture attempts), and demonstrated that feeding was characterised by slow, sinuous flight with feeding buzzes.
3. We recorded 15,273 three-dimensional bat positions, resulting in 1317 flight trajectories. We found strong behavioural responses to ground-mounted solar farms in two of three bat guilds and five of seven taxa. Specifically, bats shifted their flight towards faster (+10 to +44%) and straighter trajectories (+33%) with lower probability of prey capture attempts (~18 to ~39%) at solar farms.
4. Since these changes in flight features are explicit indicators of a decrease in bat feeding behaviour, the implementation of ground-mounted solar farms is likely to result in reduced feeding habitat quality for bats.
5. *Synthesis and applications:* The negative effects of solar farms on bat flight and feeding behaviour should be considered when solar energy projects are planned. Research is needed to understand the mechanisms underlying the effects; for example, shading underneath solar panels may reduce plant biomass and therefore insect prey availability. Until exact mechanisms are identified, efforts should be made, first to avoid building solar farms on sites with great feeding potential

Kévin Barré and Alice Baudouin share joint first authorship on this work.

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