Light Valley Solar

EN0110012

Technical Note: Updated Ground Nesting Bird Baseline

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Light Valley Solar

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Light Valley Solar

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1 Introduction

1.1 Purpose of Topic Paper

1.1.1 The clarification note has been prepared to present the Applicant's (Light Valley Solar Limited) position with regards to an update of breeding bird territories following further analysis and consultation, and should be read alongside the following submissions:

- 06.01.12 Environmental Statement (ES) Volume 1 Chapter 12 – Ornithology [**APP-050**];
- 06.03.12.01 Environmental Statement Volume 3 - Appendix 12.1 Breeding Bird Survey Report - Solar Development Sites 1-5 [**APP-174**];
- 07.19 Outline Bird Mitigation Area Management Plan [**APP-205**];
- 07.05 Outline Landscape and Ecological Management Plan [**APP-195**];
- 05.09.01 Statutory Biodiversity Metric [**APP-221**]; and
- 02.12.01 Outline Environmental Masterplan [**updated alongside this submission**].

1.1.2 The purpose of this note is to:

- Clarify why breeding bird territory mapping has been updated;
- Present and explain the resultant changes to the breeding bird baseline;
- Explain how the updated information has been considered within the assessment, including the application of the Fox (2022) prototype mitigation methodology for skylark;
- Address consultation matters relating to the implications of the revised baseline, including the location and sufficiency of the proposed Bird Mitigation Area (BMA); and;
- Present wider assessment considerations, including a review of the cumulative impact assessment.

1.2 Background and consultation

1.2.1 Following submission of the Application in March 2026, on-going engagement continued with North Yorkshire Council (NYC), Yorkshire Wildlife Trust (YWT) and the Royal Society for the Protection of Birds (RSPB). During discussions with YWT and the RSPB on 22 April 2026 (post submission of the ES), concerns were raised by YWT regarding the ground-nesting bird results for Solar Development Site 4, as presented in **APP-174**. The Applicant noted YWT's comments and relayed that the data for Solar Development Site 4 would be revisited and shared with YWT.

1.2.2 Upon reviewing the baseline survey data, the Applicant identified a geospatial corruption issue within the original dataset used to assess Solar Development

Sites 1–4 within **APP-050** and **APP-174**, which resulted in an increase of ground nesting bird territories above that reported. The baseline and overall assessment were subsequently revisited and ground-nesting bird territories were re-analysed and updated (Table 1 below). Note that the geospatial corruption was limited to Solar Development Sites 1-4 breeding bird data only; all breeding bird data was reviewed, and no further errors were identified.

1.2.3 The revised baseline was re-presented to NYC (2nd June 2026) and YWT (3rd June 2026), alongside the Applicant's consideration of the implications of what the revised data meant for the assessment of effects on ground nesting birds. Both consultees welcomed the updated data/mapping and reassessment for Solar Development Sites 1-4. The updated geospatial data was also shared with YWT upon their request via email on 7th July 2026.

1.2.4 NYC have further sought clarification regarding the relationship between the revised breeding bird territories and the proposed BMA, including the location and sufficiency of mitigation in relation to the updated skylark and corn bunting territories. These matters are addressed within this clarification note.

1.2.5 It is important to note that the RSPB confirmed that they would not be submitting Relevant Representations and welcomed the proposed BMA and the overall assessment. The RSPB were subsequently contacted regarding the revised baseline but did not respond.

2 What are the Implications of the Updated Baseline Data for the Assessment?

2.1 Introduction

2.1.1 Following review of the updated data, the Applicant considers that, although territory numbers have changed (increased), the significance of effects reported in the ES [**APP-050**] remains unchanged. Table 1, below, sets out the changes to the territory numbers and the rationale for this conclusion is presented for each pertinent species listed in Table 1, as follows. An overall conclusion of the implications of the revised baseline is then presented, including consideration of wider factors and a review of the cumulative impact assessment.

Table 1 Original territories presented within the submitted documents and the updated after revising the baseline.

	Original Territories presented within the submission within APP-050 and APP-174				Updated Territories			
Site	Skylark (s)	Lapwing (L)	Corn bunting (CB)	Yellow Wagtail (YW)	S	L	CB	YW
1	5	2	0	0	14	7	0	1
2	2	0	0	0	7	0	1	0
3	0	0	0	0	1	0	1	1
4	9	1	2	1	48	1	27	4
6 and 7	4	0	0	-	-	-	-	-
8	9	0	1	1	-	-	-	-
	16	3	2	1	**83**	**8**	**30**	**6**

Skylark

2.1.2 The revised data comprises approximately 83 territories across the Order Limits, compared with 29 territories presented within the ES, with the greatest increase within Solar Development Site 4 (see **Table 1**).

2.1.3 The updated territory mapping provides an estimate of the distribution of skylark during the survey period and represents one component of the ornithological assessment. The significance of effects has not been determined solely on the number of potential territories but through consideration of multiple lines of consideration during the re-visit of the assessment, which comprise the following and are discussed in turn below:

1) Application of the Fox (2022) method for skylark;
2) Habitat functionality and skylark productivity;
3) Population and wider landscape context; and
4) Sufficiency and location of the BMA;

2.1.4 Professional judgement has therefore been applied alongside the survey data in accordance with standard ecological impact assessment practice.

Application of the Fox (2022) method for skylark

2.1.5 The Fox (2022) method is a prototype mitigation framework developed to estimate the amount of replacement habitat required to offset the displacement of breeding skylark territories. It is widely used to inform the design and scale of mitigation in ecological impact assessments, although it is neither statutory guidance nor a prescribed assessment method. It is a tool that requires the user

to determine what proportion of territories would require mitigation based on wider ecological impacts and the wider area population.

2.1.6 Within the ES [**APP-050**], paragraph 12.17.13, the Fox (2022) method was applied to the original estimate of 27–32 potentially displaced territories. Using the natural grassland breeding density provided in Fox (0.27 territories per hectare), this equated to an indicative mitigation requirement of approximately 100–118 ha. The proposed BMA (65.7 ha) would therefore provide replacement habitat for approximately 52% of those territories. Based on the revised estimate of 83 potentially displaced territories, the equivalent indicative requirement based on the natural grassland assumption would increase to approximately 300 ha.

2.1.7 The proposed BMA differs substantially from the broad habitat types presented in Fox (2022). It will convert intensively managed farmland into botanically diverse (meadow) grassland managed specifically for ground nesting birds through managed grazing, the creation of scrapes to improve chick feeding habitat, and long-term protection from disturbance (diversion of Public Rights of Way) and reduction of predators (hedgerow removal).

2.1.8 The Applicant considers that the natural grassland density of 0.27 territories/ha is likely to be precautionary for the proposed BMA. A higher breeding density is considered more representative of the carrying capacity of a purpose-designed, actively managed area. For instance, a breeding density of 0.51 territories/ha, a density derived between the habitats listed in Fox (2022) such as spring cereals and set-aside, provides a more appropriate comparison for the bespoke habitat creation and management proposed. Note that this approach was also accepted by East Riding Yorkshire Council for Pear Tree Hill Solar Farm (which used 0.56 territories/ha for similar habitat- flower-rich other neutral grassland) (RWE, 2025). At this density, the BMA would be expected to support up to 33 skylark territories, representing approximately 40% of the 83 territories identified as displaced prior to mitigation.

2.1.9 The Applicant has therefore used the Fox (2022) methodology as one line of consideration within the overall assessment. This approach is consistent with more recent industry guidance, which recognises that project-specific habitat design, management and ecological functionality should also inform professional judgement when assessing likely effects on skylark (Solar Energy U.K, 2026 and appended at Appendix C to this note), which is supported by the RSPB and Harry Fox who authored and developed the prototype mitigation framework.

Habitat Functionality and skylark productivity

2.1.10 The proposed BMA provides long-term reliability through targeted habitat creation, management and monitoring which are designed to improve conditions to a series of ground nesting bird species. This change will deliver a substantial beneficial change from the existing baseline habitats present.

2.1.11 The Applicant highlights that Solar Development Site 4, where the highest densities of skylark territories were recorded is intersected by over-head lines (pylon and wood pole) and is managed primarily as unsuitable and unpredictable

cropping rotation and management, which is heavily dominated by winter crops throughout the past six years (see **Table 2** and **Table 3** in **Appendix A**). Field surveys recorded a marked decline in skylark breeding activity/behaviour from late May to early June (see **Figure 2** in **Appendix A**). Given that skylark would typically be expected to breed throughout the breeding season (up to four broods), this pattern is consistent with reduced habitat suitability in the latter period of the breeding period, i.e., is consistent with research that identifies reductions in breeding as crops mature and are harvested during the breeding period (Browne *et al*., 2000). Research shows that intensively managed arable systems, particularly those dominated by winter-sown crops, maize and the use of pesticides, typically support lower skylark densities and impact productivity than more diverse grassland and mixed farmland habitats (Browne *et al*., 2000; Odderskær *et al*., 1997; Gillings and Fuller, 1998; Brickle and Harper, 2000; Newton, 2004; King et al., 2008; Cornulier *et al*., 2011), this is also echoed in North Yorkshire Nationally Significant Infrastructure Project (NSIP) guidance (2026).

2.1.12 The Applicant therefore considers that the existing number of recorded territories should not be interpreted in isolation as an indicator of habitat quality and/or breeding success. Rather, the assessment has considered territory numbers alongside habitat functionality and reliability across six years, breeding behaviour and the long-term quality of the mitigation habitat proposed. It is the Applicant's position that the BMA will provide a higher quality, reliable and secure breeding resource over the lifetime of the Proposed Development lifetime than is currently available under the existing agricultural management.

Population and wider landscape context

2.1.13 Due to the change in the baseline estimate of potentially affected skylark territories and following discussion with North Yorkshire Council (NYC) on 2 June 2026, the Applicant has also considered the predicted effects within a wider population context. This includes a consideration of the skylark population at a range of spatial scales to inform the evaluation of the ecological importance of the affected population and whether the conclusions presented in the ES remain valid (**minor adverse** at a local level).

2.1.14 As stated in ES [**APP-050**], paragraph 12.17.16, according to the British Trust for Ornithology Data Report (BTO, 2025) skylark are not considered a notable species within or surrounding the Order Limits at any spatial scale (local to international), and the regional population is considered to be stable or increasing. Following engagement via email with the British Trust for Ornithology (BTO) between 3rd and 9th June 2026, an agreed approach for skylark breeding population estimates were derived by calibrating Breeding Bird Survey (BBS) counts against the Avian Population Estimates Panel (APEP) 4th edition (2020[1]; APEP4) Population estimates of birds in Great Britain and the United Kingdom.

[1] ; *apep4-population-estimates-birds-great-britain-uk-2020.pdf)

2.1.15 Although the APEP4 is based on 2016 data, the BTO confirmed via email that the skylark population in Yorkshire and the Humber have remained stable/increasing, which is also evidenced in local annual bird reports (Yorkshire Ornithological Club, 2020). Application of this method produced a North Yorkshire (county) population estimate of approximately 81,000 territories (see **Table 2**). The BTO provided further breeding skylark data via email 7th August 2026, for two vice counties (south-east Yorkshire and mid-west Yorkshire) encompassing the Order Limits. Application of the agreed method with the BTO confirmed that the population for South-east Yorkshire is approximately 41,200 territories and 28,000 territories for mid-west Yorkshire.

2.1.16 The BTO Data Report (2025) which also uses Watsonian[2] vice counties further confirm the above. The BTO Data Report enables the user to undertake an assessment of populations using the wider landscape, which is based on three 10-km Bird Atlas squares covering the Order Limits (see **Appendix B**). For skylark, the three 10-km squares support an estimated 6.1% of the Vice County for mid-west Yorkshire (VC 64) breeding population and 2.2% of the south-east Yorkshire (VC 61) breeding population. Skylark is not classified as '*Notable*' for its breeding rage and/or abundance within the BTO Data Report conclusions, indicating the landscape does not support an exceptionally high or important proportion of the population. The BTO Data Report therefore offers useful context on the importance of the surrounding area but does not quantify the population directly affected by the Proposed Development.

2.1.17 The breeding bird surveys identified approximately 83 skylark territories affected (without mitigation), which is equivalent to around 0.1% of the estimated North Yorkshire (County) breeding population (~81,000 territories) and 0.2% of the estimated South-east Yorkshire breeding population and 0.3% of the estimated mid-west Yorkshire breeding population (**Table 2**).

2.1.18 Further to this, the solar development sites equal to ~900 ha (0.083%) of 1,086,000 hectares of farmland coverage within the Yorkshire and Humber region (DEFRA, 2025). While these percentages relate to different spatial extents and should not be interpreted as directly comparable, both indicate that the scale of the affected resource is very small in a regional context.

2.1.19 The wider population context is relevant to the assessment of mitigation because the objective of the proposed BMA is to maintain the viability of the affected breeding skylark population through the provision of long-term replacement habitat, rather than to replace individual breeding territories on a one-for-one basis in their original locations. The number of territories recorded within the Order Limits is only one component of the re-assessment and is not, in itself used as a numerical determinant of significance.

[2] Vice-county boundaries were originally defined by H.C. Watson in 1852. Many biological recording schemes still use the vice-county boundaries, which have remained unchanged and therefore provide a stable way of grouping county records, rather than the modern county boundaries, which are subject to revision.

Table 2 Estimates of breeding territories from national to vice-county scale.

Area	BBS Skylarks Counted (BTO data)	Estimated Territories
Great Britain	15,688	1,500,000
Yorkshire & Humber (Regional)	1,473	~141,000
North Yorkshire (County)	849	~81,000
South-east Yorkshire (VC61)	431	~41,200
Mid-west Yorkshire (VC64)	293	~28,000

Location and sufficiency of the BMA

2.1.20 During the meeting held on 2 June 2026, North Yorkshire Council (NYC) queried whether the size and distance between the proposed BMA (located within Solar Development Site 1) and breeding territories within Solar Development Sites 2–8 (excluding Solar Development Site 5) could affect the effectiveness of the mitigation for skylark.

2.1.21 Having considered the revised breeding territory mapping, the application of the Fox (2022) methodology, habitat functionality, breeding productivity and the wider population context, the Applicant considers that the proposed Breeding Mitigation Area (BMA) remains sufficient in location and scale to provide appropriate and proportionate mitigation. Although the revised baseline identifies a greater number of breeding territories than originally reported, the assessment has not relied solely on territory numbers in isolation. Instead, it has considered habitat quality (baseline and the proposed BMA), ecological functionality, breeding productivity, and the long-term management as detailed in sections 1-3 above. The Applicant therefore considers that the proposed mitigation remains appropriate and that the significance of effects remains minor adverse at a local level, as reported in the ES. This approach is consistent with Fox (2022) and the Solar Energy UK (2026) guidance, which recognises:

2.1.22 “Skylarks are highly mobile and can relocate nesting areas annually as crops rotate. Given their short lifespan (approximately 2–3 years) and mobile nature, focusing mitigation strictly near to the original nest is neither practicable nor ecologically meaningful. Whilst on-site impacts should always be assessed, the over-arching aim should be to maintain favourable conservation status at a meaningful scale, which may be at district or county level. This means mitigation or compensation habitats, could potentially be delivered at some distance from the proposed development provided they contribute to sustaining district or county population levels” (Solar Energy UK, 2026; **Appendix C**).

2.1.23 Although the above statement specifically references skylark, this approach further extends to other ground nesting birds when assessing impacts (see Corn Bunting section).

2.1.24 To the Applicants knowledge there is no policy or guidance that states mitigation should be within a prescribed distance or within the same Watsonian or administrative vice-county or county. Notwithstanding this, the Applicant will continue to engage with NYC regarding the provision of additional mitigation. These discussions do not alter the Applicant's assessment that the proposed BMA is sufficient in both scale and location to provide appropriate mitigation or the conclusions of the ES.

Corn Bunting

2.1.25 The revised data comprise approximately 30 territories across the Order Limits, compared with two territories presented within the ES [**APP-050**], with the greatest increase recorded within Solar Development Site 4 (see **Table 1**). The Applicant has reviewed the implications of the updated data and concludes that it does not materially alter the assessment of effects or the conclusions of the ES.

2.1.26 The updated territory mapping provides an estimate of corn bunting distribution during the survey period and represents one component of the ornithological assessment. The Applicant has reviewed the implications of the revised baseline and considers that the significance of effects has not been determined solely by the number of recorded territories, but through consideration of the following lines of evidence, including:

1) Habitat functionality and corn bunting productivity
2) Mitigation and habitat enhancement measures; and
3) Sufficiency and location of the BMA

2.1.27 Professional judgement has therefore been applied alongside the survey data in accordance with standard ecological impact assessment practice.

2.1.28 Note that a comparable contemporary population estimate has not been derived for corn bunting, as the APEP4[3] estimate is based on 2016 data. Unlike skylark which has remained stable (*Section 3. Population and wider landscape* context), the corn bunting population has increased substantially since 2016 in England. Therefore, the application of the 2016 estimate would not provide a robust representation of the current breeding population (See **Figure 1** below).

[3] apep4-population-estimates-birds-great-britain-uk-2020.pdf)

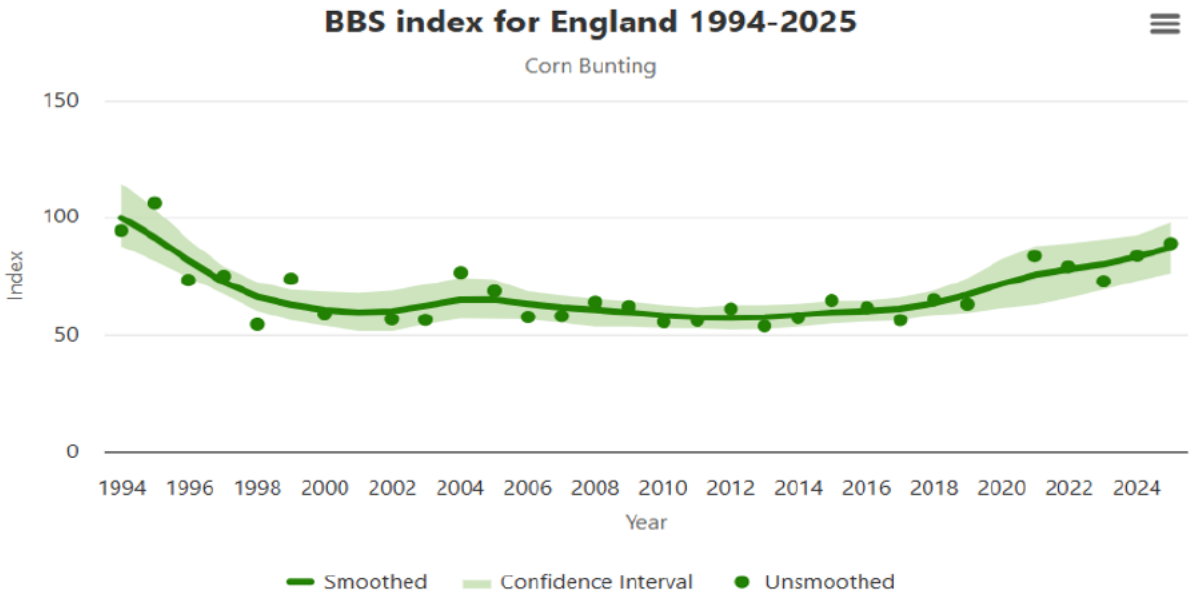

Figure 1 **Graph to show the corn bunting Breeding Bird Survey (BBS) Index population for abundance increase since 2016; England (BTO, n.d.). Note [KD5.1][KD5.2]in 2016, the Breeding Bird Survey index score (relative measure of bird population abundance calculated annually) for corn bunting was 56 and the score now (2025) sits as 89 (~59% increase).**

Habitat functionality and corn bunting

2.1.29 Corn bunting are associated with croplands (barley and legumes), field margins, rough grassland and linear habitats (Furgerson-Lees et al., 2011) during the breeding period and are notoriously late nesters in comparison to other farmland bird species (nesting typically occurs late May, June and July onwards; RSPB, n.d.).

2.1.30 The highest densities of corn bunting were recorded in the same Solar Development Site as skylark (Solar Development Site 4), which is largely made up of winter and unsuitable crops (maize and vegetable) as presented in Appendix A, which has been reviewed over the last six years. Whilst winter crops are suitable for this species, winter crops are harvested much earlier than spring-sown crops and as a result of their late nesting nature, nesting attempts within winter crops are subject to a high risk of failure where harvesting occurs during nest building and before chicks are able to fledge. Given that chicks may remain flightless until late August, nest destruction associated with harvesting operations is well documented (RSPB, n.d.) and is one of the key factors for the species decline. Therefore, while the presence of relatively high territory densities indicates that the Solar Development Site 4 is attractive/suitable to breeding corn bunting, it does not necessarily reflect optimal and long-term breeding conditions or high productivity (see Table 3 in Appendix A). See Figure 3 in Appendix B,

which indicates a notable decline in breeding activity/behaviour during the period when corn bunting breeding would typically be expected to peak.

2.1.31 The Applicant therefore considers that the revised corn bunting baseline should not be interpreted in isolation as an indicator of habitat suitability. Rather, consideration has been given to the functionality of existing agricultural habitats over a long-term period (up to six years), including the risks associated with intensive management, crop harvesting and reduced availability and reliability of suitable nesting and foraging resources throughout the breeding season within the Order Limits.

Mitigation and habitat enhancement

2.1.32 The dedicated BMA, habitat enhancements across the Order Limits include wildlife corridors, species-rich grassland margins and arable field margins will provide secure, reliable and higher quality breeding and foraging habitat for corn bunting. Excluding the BMA (65.7 ha), the Proposed Development will deliver approximately 79.4 ha of neutral grassland margins and 29 ha of arable field margins across the Order Limits, as presented in [**APP-221**] representing a substantial increase in the availability of higher quality foraging and nesting habitat compared to the existing baseline. This is presented in Outline Environmental Masterplan [PDA-003 to PDA-010].

2.1.33 Importantly, nesting habitat suitability will not be wholly lost within the solar array areas. Removal of routine pesticide application, together with the creation of species-rich grassland, habitat mosaic, field margins and scrapes, are expected to increase invertebrate abundance and improve foraging and nesting opportunities throughout the operational lifetime of the Proposed Development. These measures are likely to benefit corn bunting directly by improving prey availability and reliable nesting habitat during the breeding season. This is also evidenced in the BTO 2025 Breeding Bird Survey Report, which specifically highlights that corn bunting are more abundant on nature-friendly solar sites, demonstrating that considered habitat management within solar farms can provide tangible benefits for breeding birds. The findings highlight that solar farms need not be detrimental to bird populations and that, when appropriately designed and managed, they have the potential to provide valuable habitat for a range of breeding bird species (Heywood et al, 2025; see **Appendix E**).[KD6.1]

2.1.34 The Applicant therefore considers that the proposed location and the overall enhancements throughout the Order Limits are appropriate to deliver the intended outcomes and that the effectiveness of mitigation should be evaluated primarily by reference to habitat function, quality, long-term management and security, rather than solely its proximity to individual breeding territories.

2.1.35 3.Sufficiency and location of the BMA

2.1.36 North Yorkshire Council raised concerns regarding the relationship between the proposed BMA and the location of the revised corn bunting territories, particularly those associated with Solar Development Site 4 during the meeting held on 2 June 2026.

2.1.37 Unlike skylark, there is currently no established mitigation framework equivalent to the Fox (2022) methodology for corn bunting. Furthermore, corn bunting exhibit different breeding ecology and territorial behaviour, with territories frequently clustered where suitable habitat exists (Hartley & Shepherd, 1995). Accordingly, the implications of the revised baseline are more appropriately considered in the context of habitat availability and the spatial distribution of territories, rather than through application of a fixed territory-based mitigation ratio.

2.1.38 The Applicant considers that the effectiveness of proposed BMA and enhancements throughout the Order Limits should be assessed primarily in terms of the species requirements, ecological function, quality and long-term management of the habitat provided as detailed above. The objective is to maintain and enhance the breeding population through the provision of secure, high-quality habitat, rather than to recreate individual breeding territories immediately adjacent to those currently occupied.

2.1.39 This approach is supported by evidence from B. Secker (2024), which indicates that corn bunting are more tolerant of solar developments than skylark and can breed successfully within solar farms where sites are appropriately designed and managed. Nesting and successful chick rearing have been recorded over several years, with the closest nest record located within 30 m of solar array. The long-term study assumes that the presence of solar panels may reduce predation risk by making nests less conspicuous. Corn bunting breeding in adjacent land (up to 750 m away) were continually recorded using the solar array for foraging while provisioning young, potentially contributing to increased fledgling survival.

2.1.40 Although preliminary, this evidence indicates that appropriately designed and managed solar developments are capable of supporting breeding farmland birds, including corn bunting, reinforcing the importance of mitigation design and long-term habitat management.

2.1.41 To the Applicant's knowledge there is no policy or guidance that states mitigation should be within a prescribed distance or within the same Watsonian or administrative vice-county or county. None withstanding this, the Applicant will continue to engage with NYC regarding the provision of additional mitigation. These discussions do not alter the Applicant's assessment that the proposed BMA is sufficient in both scale and location to provide appropriate mitigation or the conclusions of the ES.

Lapwing and yellow wagtail

2.1.42 The revised data comprises an additional five territories for each species across the Order Limits (see Table 1), compared with the territories presented within the ES [**APP-050**]. Whilst the revised baseline identifies additional territories, it does not alter the valuation of either species or the rationale underpinning the assessment presented within the ES.

2.1.43 The Applicant considers that lapwing will be appropriately mitigated through the design of the BMA, noting that lapwing is ranked as one of the top 10 species in

decline within or near to the Order Limits, at a local (vice county) to internation scale according to the BTO Data Report as presented in [**APP-050**].

2.1.44 The BMA has been specifically designed to provide suitable breeding habitat for lapwing and yellow wagtail through the creation and long-term management of open grassland habitat, scrapes, with rotational bare ground scraping which is appropriately provided and secured within the Bird Mitigation Area.

2.1.45 Accordingly, the Applicant concludes that the updated data does not alter the significance of effects reported for lapwing or yellow wagtail within the ES [**APP-050**].

2.1.46 No further matters have been raised by NYC in relation to these species.

Wider benefits

2.1.47 The Applicant notes that the BMA has the potential to deliver wider biodiversity benefits beyond the species recorded within the Order Limits by contributing to the ecological resilience of the surrounding landscape.

2.1.48 Whilst the Order Limits sits outside of the Area of Particular Importance for Biodiversity (APIB) identified within the Local Nature Recovery Strategy for North Yorkshire (LNRS; North Yorkshire Council, 2025), the Applicant considers that the BMA and its habitat enhancements could contribute to the wider objectives and measures of the North Yorkshire Local Nature Recovery Strategy (n.d) by improving habitat connectivity and supporting landscape-scale biodiversity enhancement. This is consistent with the biodiversity enhancement objectives of EN-1 and EN-3 (Department for Energy Security and Net Zero, 2026).

3 Wider Assessment Considerations

3.1 Cumulative impacts

3.1.1 The Cumulative Impact Assessment (CIA) presented in the ES [**APP-050**] considered all relevant committed projects (particularly Nationally Significant Infrastructure Projects and other planning applications) up to 20 km from the Order Limits.

3.1.2 Up to 50 developments were independently reviewed. Where relevant, proposed mitigation for ground-nesting birds was considered alongside predicted habitat losses, taking account of the wider landscape, species mobility, distances between developments, and mitigation secured through neighbouring schemes.

3.1.3 The review shows that breeding bird mitigation is incorporated into relevant large-scale developments where required. For example, the Helios Renewable Energy Project (EN010140) provides 37 ha of mitigation habitat and additional skylark plots, while Fenwick Solar Farm (EN010152) concluded that embedded mitigation reduced residual effects on 43 skylark territories to minor adverse or negligible. Mylen Leah Solar Farm (EN0110002; 5km east of Solar Development Site 1) has scoped ground-nesting birds into its assessment and is likely to secure

appropriate mitigation through the DCO process as required as detailed in the Preliminary Environmental Information Report (PEIR; Statkraft, 2026). Collectively, the review demonstrates that breeding bird mitigation has and will be considered across relevant cumulative developments, avoiding displacement of birds across the wider landscape. Consequently, no significant adverse cumulative effects have been identified.

3.1.4 In addition, thirteen planning applications and screening requests are located within 2 km of Solar Development Sites 2–8 (excluding Site 5). Where ground-nesting birds were recorded, mitigation has either been incorporated or proposed, including the adjacent Noventum Power Ltd scheme (ZG2023/0557/SCN/AP/2025/0037/REF [ID 67]), which maintains eight skylark plots for six skylark territories, the proposed solar and BESS development (ZG2024/1129/FULM), which secures 14 skylark plots for 14 territories, and the proposed 75-dwelling development (ZG2025/1019/FULM), which identifies skylark plots or other sympathetic management for retained arable land (15ha). The remaining developments either recorded no or very low numbers of ground-nesting birds (two probable territories for skylark maximum), identified no significant ecological effects due to the scale or nature of the proposals, or comprise EIA screening requests that did not include supporting ecological survey information (See **Appendix D**).

3.1.5 Consequently, the CIA considered both impacts and mitigation and concluded that there would no significant adverse effects on ground nesting birds. It is the Applicants position that the conclusion of the CIA remains unchanged.

4 Ongoing discussions with North Yorkshire Council

4.1.1 Notwithstanding the Applicant's conclusion that the proposed BMA is both sufficient in extent and appropriately located to mitigate the predicted effects of the Proposed Development at a local scale, the Applicant is continuing discussions with NYC to explore whether additional or alternative mitigation areas within Solar Development Sites 2–8 (excluding Solar Development Site 5) could be incorporated by agreement. However, it should be noted that the Applicant did review Solar Development Site 4 as a potential location for mitigation in pre-application. However, the majority of Solar Development Site 4 is not considered suitable for mitigation, or for delivering its intended objectives. This is due to the intersection of numerous power and over-head utilities lines (pylon and wood pole) intersecting the central area and southwest extent of Solar Development Site 4, together with the extensive network of hedgerows dissecting the overall area, which would require removal for habitat betterment. Consequently, only small areas within Solar Development Site 4 would be considered appropriate.

4.1.2 These discussions reflect the Applicant's commitment to ongoing collaboration during the Examination and a willingness to explore opportunities for enhancement where practicable. They should not be interpreted as indicating that

the current mitigation strategy is inadequate, that further mitigation is required to make the Proposed Development acceptable, or that the Applicant's conclusions regarding the sufficiency or location of the proposed BMA have changed.

5 Conclusion

5.1.1 Following the identification of the geospatial data corruption affecting breeding bird territory mapping for Solar Development Sites 1–4, the Applicant has considered the implications for the Ornithology chapter of the ES [**APP-050**].

5.1.2 This has taken account of the revised territory estimates alongside species ecology, habitat functionality, wider population context, existing landscape baseline, mitigation design, cumulative impacts and, for skylark, the application of the Fox (2022) methodology. Although revised territory estimates are higher, the Applicant considers that the proposed mitigation remains appropriate and proportionate, and that the significance of effects reported within the ES remains unchanged.

5.1.3 The Applicant therefore remains satisfied that the revised breeding bird territory updates does not alter the conclusions of the ES [**APP-050**], and that the significance of effects and the proposed mitigation strategy remain appropriate and robust.

6 References

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Appendix A: Solar Development Site 4 data (cropping and bird data)

Table 1 Cropping data/land management over the past six years within Solar Development Site 4. Green highlights optimal nesting habitat. habitat

No. of hectares (ha) per parcel of land within Solar Development Site 4	2021	2022	2023	2024	2025	2026
33.4	Potatoes	Winter Wheat	Winter Barley	Winter Oilseed Rape	Winter Wheat	Second Wheat
29	Winter Barley	Winter Oilseed Rape	Winter Wheat	Sugar beet	Winter Wheat	Maize
27	Spring Beans	Winter Wheat	Sugar beet	Spring Wheat	Maize	Winter Wheat
19.5	Winter Linseed	Winter Wheat	Winter Naked Oats	Spring Wheat	Flower rich grass blocks	Flower rich grass blocks
18.5	Second Wheat	Potatoes	Winter Wheat	Second Wheat	Maize	Winter Wheat
17.1	Winter Wheat	Winter Barley	Winter Naked Oats	Maize	Winter Bird Food	Winter Bird Food
14.3	Winter Linseed	Winter Wheat	Winter Barley	Winter Oilseed Rape	Winter Wheat	Second Wheat
13.7	Winter Barley	Winter Oilseed Rape	Winter Wheat	Carrots	Winter Wheat	Potatoes
13	Spring Barley	Sugar beet	Winter Wheat	Spring Beans	Winter Wheat	Maize
12	Winter Linseed	Winter Wheat	Winter Naked Oats	Spring Wheat	Potatoes	Winter Wheat
11.1	Second Wheat	Potatoes	Winter Wheat	Spring Beans	Winter Wheat	Maize
5.9	Winter Wheat	Fallow	Winter Wheat	Winter Barley	Maize	Winter Wheat

Table 2 Winter crop coverage (%) only over the past six years. Note that this does not include other unsuitable crops including maize, second wheat, potatoes, sugar beet and carrot.

Year	Winter crop area (ha)	Percentage coverage of winter crop only within Solar Development Site 4
2021	141.1	65.8%
2022	166.0	77.4%
2023	187.5	87.4%
2024	72.1	33.6%
2025	131.6	61.4%
2026	128.2	59.8%

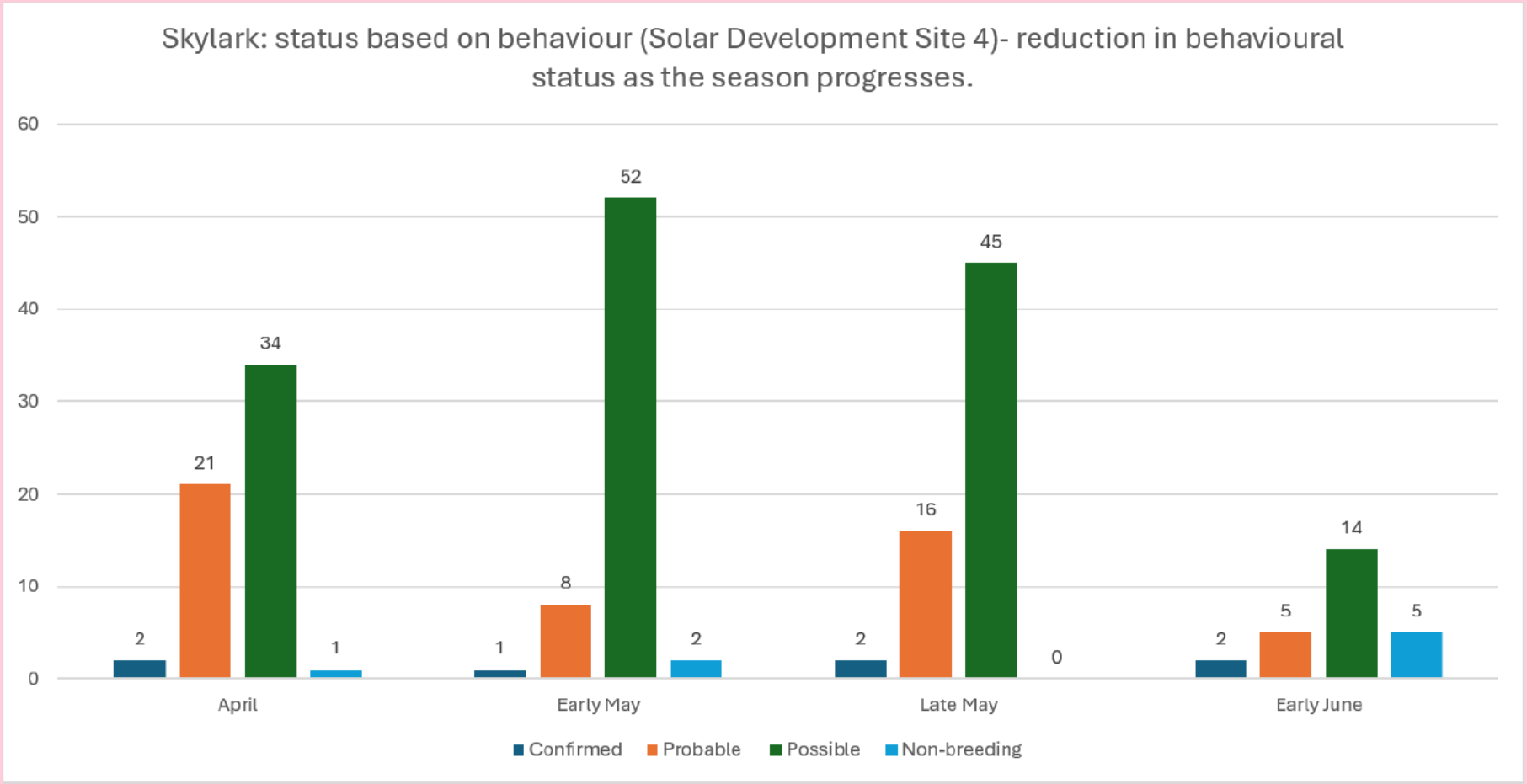


Figure 2 **Skylark breeding behaviour recorded within Solar Development Site 4. Possible- single, singing male, probable- pair and confirmed-carrying food/young present.**

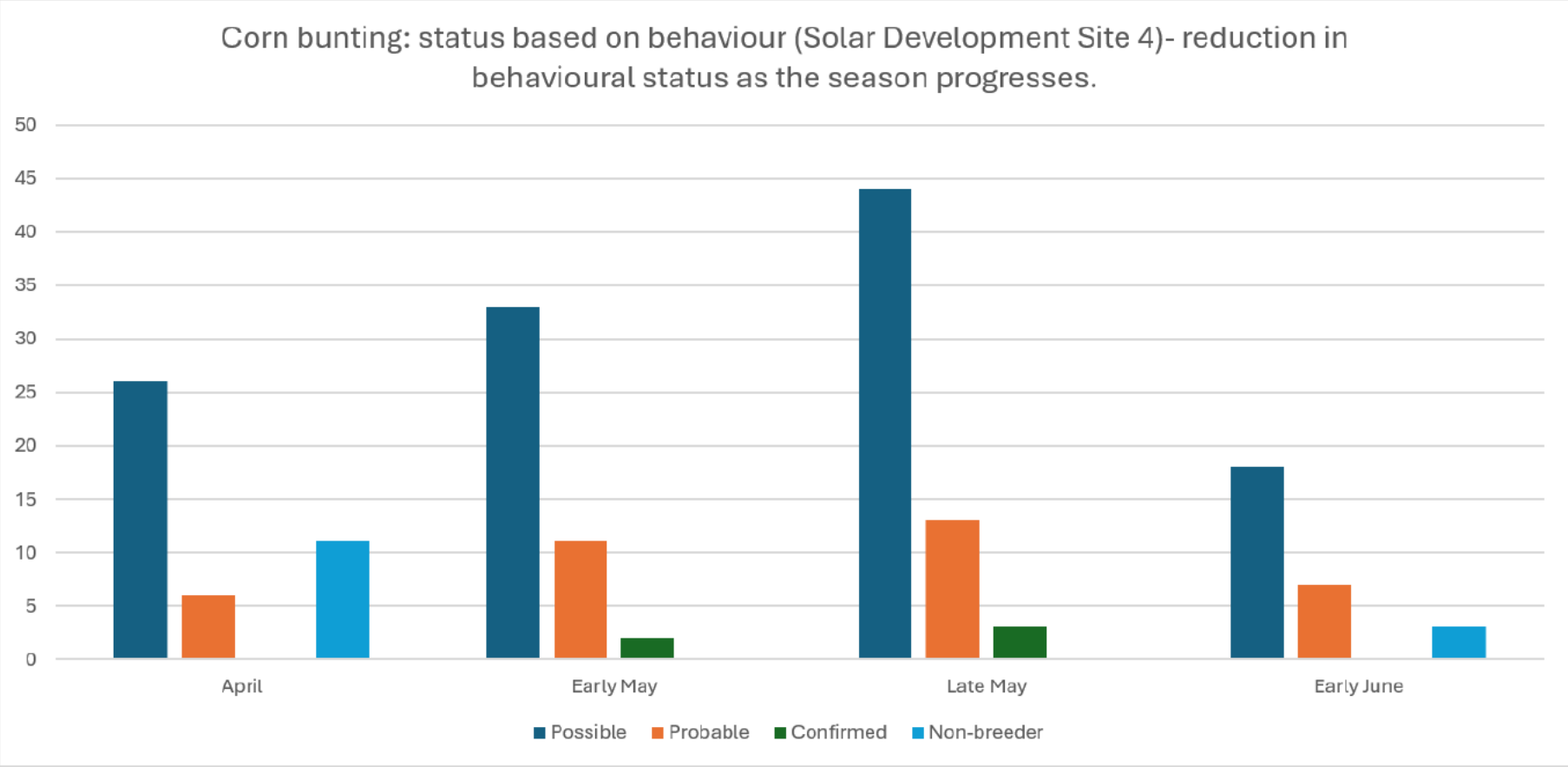
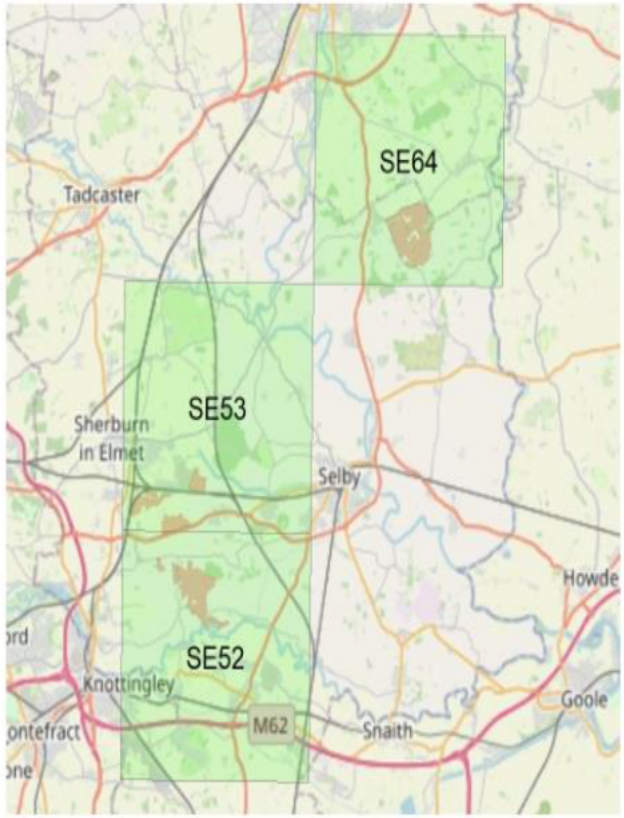


Figure 3 **Corn bunting breeding behaviour recorded within Solar Development Site 4. Possible- single, singing male, probable- pair and confirmed-carrying food/young present. Note that June and July are months where "peak" breeding activity takes place.**

Appendix B: Spatial figures (BTO Data Report – Light Valley Solar, 2025)

Site with 10-km squares

Three relevant 10-km squares : SE52, SE53, SE64



Vice-county

Vice-county = Mid-west Yorkshire, South-east Yorkshire

Appendix C: Solar Farms and Skylark Article (Solar Energy U.K, 2026)

Solar Farms & Skylarks

June 2026

About us

Solar Energy UK is a leading trade association championing the full solar and energy storage ecosystem. Backed by our members, we bring together a dynamic, member-driven community of over 440 businesses and partners, from ambitious, forward-thinking SMEs to globally recognised brands.

As a non-profit, we're united by a forward-looking mission: to catalyse the collective strengths of our members to build a clean energy system for everyone's benefit.

RSPB

The RSPB supports the overall intent and direction of this paper in promoting a whole-farm approach and a range of mitigation measures for skylark conservation and we very much welcome this work in addressing the needs of this red-listed species in the context of solar development. We recognise the important role of solar power in helping us reach net zero and how this needs to be done in a way that also protects and restores nature. We highlight the importance of continuing to build the evidence base to better understand how different interventions perform across farming systems and to ensure that established approaches are appropriately reflected within a flexible, context-dependent mitigation toolkit.

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Please note that the paper and its contents do not necessarily represent the views of any of these organisations.

Executive Summary

This Topic Paper considers the relationship between solar farm developments, planning policy and the conservation of Skylarks (Alauda arvensis) in England. Its intended aim is to assist planning authorities, developers, and other stakeholders in making informed decisions on proposals that affect breeding Skylarks, particularly where a solar farm is proposed on an intensively managed arable location.

Skylarks are a red-listed farmland bird species of national conservation concern. Their population has declined markedly in recent decades, largely because of agricultural intensification, changes in cropping patterns, and the reduction of suitable nesting habitats. Against this backdrop, the expansion of solar energy across the UK's rural landscape has raised questions about potential impacts on Skylark populations, as well as opportunities for biodiversity enhancement.

Evidence from multiple research programmes—including a member journal piece published in the Chartered Institute of Ecology and Environmental Management 'In Practice' journal (Fox, 2022), Solar Energy UK (2023–2025), and the University of Cambridge (2025)—indicates that well-managed solar farms have the potential to play a positive role in supporting farmland biodiversity. Studies have demonstrated that sites managed for ecological outcomes often support higher overall bird abundance and species richness than adjacent arable farmland (e.g. Montag et al., (2016), Copping et al., (2025)). Although Skylarks are displaced from nesting within the footprint of solar arrays, the species continues to forage within and around these developments.

Skylarks are listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and are recognised as a priority species under the UK Biodiversity Framework. Combined with national and local planning policies, this legal status places a duty on Local Planning Authorities (LPAs) to consider avoidance, then mitigation measures, before planning consent can be provided. However, Natural England's standing advice on wild birds does not require complete avoidance of impacts, or for mitigation to be based on the number of breeding pairs potentially displaced from a development site, rather focus on 'no net loss of habitat'.

Appropriate mitigation and compensation measures have often comprised the establishment of Skylark plots. Within an arable landscape, Skylark plots have been demonstrated to increase productivity by at least 50%, whilst taking 0.3% of land out of production; however, plots can be challenging to implement over the operational lifetime of a solar farm development due to land costs and availability, with land-managers sometimes reluctant to commit to their provision over the relatively long period of solar farm operation. Alternative mitigations approaches include meadow grassland creation, set-aside or spring sown crops and the maintenance of uncultivated field margins, whilst maintaining open sightlines required by the species.

If properly managed, these approaches can provide long-term ecological benefits that extend beyond Skylarks, supporting a wide range of farmland birds and invertebrates. Many solar farms are located on intensively managed arable land; by reducing chemical inputs and promoting semi-natural vegetation cover, such developments can deliver a meaningful biodiversity uplift while continuing to serve their primary function as renewable energy infrastructure. This in turn can provide a meaningful contribution to Local Nature Recovery Strategies, through habitat and connectivity improvements. Solar developments differ from most other forms of construction in that they are reversible, low-impact, and capable of long-term ecological enhancement. When designed with nature in mind, and properly managed, they contribute to national objectives for both biodiversity recovery and climate mitigation.

This Topic Paper addresses a growing inconsistency in the treatment of Skylark impacts within solar farm planning decisions. While Skylarks are rightly recognised as a species of conservation concern, mitigation requirements are sometimes applied in a way that assumes complete habitat loss and necessitates pair-for-pair replacement. Current ecological evidence and planning policy do not support such a universal approach. This paper therefore reviews the available ecological evidence, relevant planning policy, and practical mitigation approaches in order to support proportionate, evidence-led decision-making.

Decision-makers should therefore consider impacts on Skylarks in this wider context, balancing localised loss of nesting sites against the significant ecological gains solar energy developments can potentially deliver.

Introduction

Solar energy is a central component of the United Kingdom's renewable energy transition. As the deployment of solar farms accelerates in response to national net-zero commitments and energy security priorities, increasing attention is being paid to their relationship with biodiversity.

Among farmland birds, the Skylark has become a focal species in planning discussions because of its ground-nesting ecology and conservation status. Questions frequently arise regarding whether solar developments lead to unacceptable impacts on breeding populations and what forms of mitigation or compensation may be appropriate.

This Topic Paper has been prepared to support consistent, evidence-based and policy-compliant planning decisions. It summarises the current understanding of Skylark ecology, reviews available research on biodiversity outcomes at solar farms, and discusses how planning policy can be applied proportionately in this context.

Solar Farms and Breeding Birds

Research into the biodiversity outcomes of solar developments has expanded in recent years. The annual Solar Habitat Reports, commissioned by Solar Energy UK (2023, 2024, 2025) indicate that well-managed solar sites host diverse assemblages of invertebrates, plants, and birds, including a wide range of species of conservation value (Solar Energy UK 2024).

Similarly, the University of Cambridge's Centre for Landscape Regeneration (Copping et al., 2025) explored bird populations on six solar farms in the East Anglian Fens, working with RSPB scientists. The research led by RSPB Conservation Scientist Dr Joshua Copping shows that, under certain conditions, solar farms can support higher abundances of some farmland bird species than intensively managed arable land. Those solar farms which were well managed consistently showed benefits for a broad range of species listed as of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. A Lancaster University thesis by Secker (2024), concluded that solar farm age was an important predictor of all bird species richness on solar parks, which was considered likely to be related to increases in structural diversity and habitat heterogeneity occurring over time as the solar farm matures. Secker also documents a case of Corn Buntings, another red-listed ground nesting farmland bird, successfully nesting within a sensitively managed solar farm (Secker et al., 2026).

The RSPB considers that there is growing evidence to suggest that solar farms can be beneficial to nature when they are not built on sites that are already important for wildlife, and notes that solar farms managed with nature in mind can boost pollinator numbers (RSPB, 2025).

These findings clearly demonstrate that solar farms can benefit farmland birds including multiple species of Principal Importance, and wider biodiversity increases, in intensively managed arable-dominated landscapes; however, conservation focused management is required to achieve positive outcomes.

Overview of UK Skylark Ecology, Population Status and Trends

The Skylark is widespread across the UK, traditionally linked to open farmland, meadows, and heathlands. Famous for its distinctive song, flight and cultural significance, the species has undergone major declines over the past half-century. Skylark numbers fell by around 60% between the mid-1970s and late 1990s, with slower declines continuing into the 21st century before a more recent levelling-off, with some modest regional upturns.

This prolonged population decline led to the species' listing on the UK 'Red List' of Birds of Conservation Concern (Stanbury et al., 2021). Despite substantial declines, Skylarks remain a familiar feature of the UK countryside, with an estimated 1.6 million breeding pairs in 2016 (Woodward et al., 2020). According to the most recently available report by the British Trust for Ornithology (BTO) (Heywood et al., 2025), numbers have increased by 9% during the past decade and almost 20% in the last five years in south-east England and the East Midlands. These figures buck the long-term trend, although the recent increases in England and Scotland are not mirrored in Wales, where there has been a 23% decline since 2016. he species nests on the ground in open habitats with short vegetation (20-50cm high) and clear visibility to detect predators. Skylarks favour open arable landscapes, uplands, and coastal saltmarsh, where breeding densities are typically highest, whilst intensively managed dairy and silage fields support fewer pairs.

Consequently, land management practices strongly influence local and regional Skylark abundance. Within arable landscapes, different crop-types support varying densities of Skylarks, meaning that abundance and breeding productivity are heavily dependent on crop variation and populations are forced to adapt to local agricultural rotation. There is some evidence that breeding pairs will relocate during a breeding season where crops have grown and rendered their early-season location unsuitable for later breeding attempts (Donald, et al., 2001).

Skylark chicks are fed almost exclusively on invertebrates, so breeding productivity is closely linked to the availability of insects. The 2023 'State of Nature Report' (Burns et al., 2023) identifies a substantial reduction in invertebrate populations, and these are greatest in regions with high cropland cover (Mancini et al., 2023).

Solar Farms and Skylarks

A study by Fox (2022), published in CIEEM's In Practice journal provided a succinct appraisal of the known and assumed impacts of solar farms on Skylarks, and included a prototype approach to mitigation. Fox noted that, while Skylarks are regularly observed on operational solar farms, nesting within the panel array has not been recorded. The shaded, fragmented, and enclosed environment beneath panels is thought to increase predation risk and reduce visibility, which are key factors influencing nest site selection. Consequently, most evidence supports the assumption that Skylarks avoid nesting directly within solar arrays and are therefore displaced from nesting in fields where panels are installed.

Nevertheless, solar farms are likely to offer foraging opportunities for breeding pairs in surrounding land, with observations of breeding birds using solar farm margins as a nursery confirmed in the UK (Montag et al., 2016; Secker, 2024). The conversion of arable land to managed grassland within a solar farm is likely to lead to increased invertebrate abundance and diversity, and therefore increased food resources for Skylarks, through both reduced chemical inputs and a more stable ground structure due to cessation of tilling activities.

Whilst there is no evidence of Skylarks nesting within solar arrays, they are consistently recorded foraging and displaying above or adjacent to solar installations. This indicates that solar farm sites can still offer foraging habitat for nearby pairs. Solar Energy UK's Solar Habitat 2025 report found that in 59% of surveyed solar farms, Skylarks were recorded exhibiting foraging behaviour within or immediately adjacent to panel arrays, providing evidence of the use of solar farms as a foraging resource. Secker (2024) noted six different Skylarks carrying food at two solar farms, all of which were observed during the late breeding season visit when Skylarks spent a higher percentage of their time foraging on solar farms. This indicates solar farms may supplement depleted food resources in the local landscape throughout the breeding season.

Legal and Policy Framework

This section briefly outlines the key legislative and policy context for consideration of effects on Skylarks in planning decisions in England. It is not intended to be a comprehensive statement of the legal or policy position for any particular planning process, which will require in all cases consideration of the relevant legislative context, together with planning policies relevant to that decision-making process. It describes matters that have general application across planning processes.

Under the Wildlife and Countryside Act 1981, it is an offence to (amongst other matters) intentionally kill, injure, or take any wild bird, or to damage or destroy the nest of any wild bird while it is in use or being built. Developers must therefore ensure that construction or operational activities avoid impacts on nesting birds.

Skylarks are listed by the Secretary of State under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as a species of principal importance for the conservation of biodiversity in England. That designation, together with relevant planning policy, require decision-makers to consider impacts on the species in planning and development control. They are also listed as a Red List species in Birds of Conservation Concern 5 (Stanbury et al., 2021).

The National Planning Policy Framework (NPPF)and National Policy Statements for Energy include national planning policy which addresses impacts on biodiversity and deliver measurable net gains.

Natural England's (NE) standing advice on wild birds (Gov.UK 2025) emphasises avoiding impacts where possible and implementing mitigation or compensation where necessary. Replacement habitat should ensure no net loss, maintain habitat connectivity, and support long-term populations. Whilst the NE standing advice sets out requirements, it is not straightforward to apply to the displacement of a ground-nesting species for which, in many locations, baseline populations are dependent on farming practice. That exercise is considered in more detail in Section 7.

Local Development Plans typically expand on national policy requirements by including specific policies for protecting priority species and habitats identified in emerging Local Nature Recovery Strategies through habitat and connectivity improvements.

Impact Assessment - Best Practice for Skylarks

Solar farms are often located on lowland agricultural land. Consequently, the potential for direct loss of nesting habitat is potentially significant and an application could be deemed to fail policy tests should development proceed without mitigation or compensation. Given the mobile nature of the species, and inter-annual population fluctuations due to crop rotation and farming practices, consideration of a 'development site-only' population should be treated with caution in impact assessment, especially where a development site is modest in scale, or numbers of Skylark pairs are low.

Whilst best practice ecological impact assessment should always be undertaken to determine site-level effects, a landscape-scale assessment of Skylark populations may be more ecologically meaningful, depending on the level of impact and scale of development.

Neither planning policy (at a national level) nor NE standing advice on wild birds requires a 'pair-for-pair' replacement within a proposed development site and nor is such a metric typically applied to other species of identical conservation status. Specific Skylark mitigation or compensation measures may not always be deemed necessary for small-scale developments when wider biodiversity impacts and enhancements are considered against policy. Impact assessments should seek to demonstrate that Skylark populations will be maintained at an appropriate geographical scale, through avoidance or proportionate and deliverable mitigation or compensation measures.

The cumulative effect of multiple small-scale developments has the potential to become ecologically meaningful, even for displacement of a low number of breeding territories. Planning decisions will typically require assessment of cumulative and in-combination impacts, and it is consequently appropriate to also consider populations at a broader geographical scale, especially where measurable population impacts are predicted.

When planning balance is considered, it is potentially relevant that solar farm developments typically achieve no net loss, and often a net gain, for Species of Principal Importance (Section 41, NERC Act 2006) priority farmland bird species when suitable conservation management measures are implemented. According to Copping et al., (2025), farmland bird species consistently found in greater abundance at solar farms managed for biodiversity ('mixed habitat') included a series of 'Red listed' Birds of Conservation Concern that are also designated as Species of Principal Importance i.e., with the same designated status as Skylark); for example Corn Bunting, Cuckoo, Linnet and Yellowhammer were all more common at solar farms than arable sites. So, whilst there may be displacement of Skylarks from breeding sites with the development of a solar farm, and which should be transparently presented in impact assessment, priority farmland bird species as a group can benefitted from well-managed solar farm developments. Copping et al., (2025) also notes that other 'Red-listed' and 'Amber-listed' farmland species found in greater abundance at mixed habitat solar farms comprised Greenfinch, Dunnock, Kestrel, Reed Bunting, Song Thrush, Stock Dove and Wren.

Determining Mitigation

Mitigation for a species that is widespread, sometimes locally abundant, and reliant on large, open farmland areas presents an inherent challenge for all developers of such sites. This applies not only to solar development, but also to other large-scale land-use changes such as housing and infrastructure projects where these are located on farmland.

The key to effective mitigation is understanding the species' ecological use of a site and assessing impacts at an appropriate geographic scale. Impacts should be evaluated against a meaningful population unit. The loss of a small number of territories may be locally noticeable but insignificant at district or regional scale, particularly in landscapes where crop rotation regularly alters habitat suitability.

Population data at a county level are available in some local bird reports and atlases; however, such data are rarely up-to-date and accurate information on county or district level populations cannot be consistently obtained. As examples, the 2019 publication 'the Birds of Shropshire' estimated at 14,000 pairs in 2011 (Smith, 2019), and the annual bird report for the same county classifies the species as 'Green-listed' (of least concern). Similar information is available for Norfolk, where the 2007 populations was estimated to be 25,000 to 30,000 breeding pairs (Taylor and Marchant, 2011). These figures are outdated but can provide some more localised context. At a very localised level, such as that within an individual planning application site, land management changes and particularly the rotation of crops are likely to be the main drivers in fluctuations of breeding pairs.

As outlined in Section 5, NE standing advice states that replacement habitat for displaced breeding birds should meet the following four criteria:

- No net loss of habitat
- Like-for-like replacement near to the original nest to provide a long-term home
- Alternative habitat that is better in quality or area than the lost habitat, and
- Maintained habitat connection to allow normal bird movement.

Each of these is considered in turn below with regards to Skylark ecology, mitigation opportunities and limitations.

No Net Loss of Habitat

Natural England's no-net-loss principle is central to biodiversity policy but requires careful interpretation for Skylarks and solar farms. It is unlikely that solar farms, like many other major development types located on farmland, can realistically achieve no net loss of breeding habitat. In most other forms of development, however, habitat loss is total and permanent, necessitating a stricter like-for-like replacement. In contrast, research shows that well-managed solar farms can continue to provide a foraging habitat for Skylarks where pairs are present in the surrounding area. In these circumstances, habitat within a solar farm is therefore partially retained, rather than lost entirely, so long as management is conservation focused.

Evidence suggests that breeding success in Skylarks is influenced more by resource quality (such as invertebrate abundance, vegetation height and structure) than by simple habitat area of arable cropland. For this reason, NE's guidance on creating alternative habitat that is better in quality or area than the lost habitat may provide a more appropriate framework for Skylark conservation in relation to solar developments.

Like-for-Like Replacement Near to the Original Nest

Skylarks are highly mobile and can relocate nesting areas annually as crops rotate. Given their short lifespan (approximately 2–3 years) and mobile nature, focusing mitigation strictly near to the original nest is neither practicable nor ecologically meaningful. Whilst on-site impacts should always be assessed, the over-arching aim should be to maintain favourable conservation status at a meaningful scale, which may be at district or county level. This means mitigation or compensation habitats, could potentially be delivered at some distance from a proposed development provided they contribute to sustaining district or county populations.

Alternative Habitat That Is Better in Quality or Area Than the Lost Habitat

Where pairs are present in the wider area, solar farms managed with permanent grassland are likely to provide a long-term foraging gain for Skylarks, albeit this is likely to be limited to the fringes of the solar farm development. The cessation of cultivation and agricultural-chemical inputs enables soil recovery and increased invertebrate diversity, improving food availability. Over an operational lifespan of 25–60 years, this produces a sustained ecological benefit, even if nesting habitat within the array is lost or reduced. Consequently, whilst solar farms displace breeding pairs from nesting within a development site, they can also provide an area of better-quality habitat for nearby retained pairs, potentially leading to increased breeding productivity. This can provide a reliable food resource for the operational lifetime of the solar farm, which is likely to be otherwise subject to changes in farming practices and market conditions.

Maintained Habitat Connection to Allow Normal Bird Movement

Skylarks exhibit high mobility, moving between foraging and nesting sites as conditions dictate. The open nature of solar farms, with grassland beneath and around panels, does not impede this movement. At ecologically meaningful scales, solar farms maintain habitat connectivity, allowing normal Skylark dispersal and foraging patterns across the wider agricultural landscape.

Approaches to Mitigation and Compensation

It has become common practice for solar farm applications to include Skylark mitigation, either in outline or detailed form. Typically, the scale of mitigation is based on the number of territories recorded during baseline surveys, with provision of nesting habitat for all or a proportion of displaced pairs. Mechanisms often involve either the delivery of 'Skylark Plots' on retained or nearby arable land, changes to les intensive management practices (typically spring sowing) or the creation of permanent meadow grassland with conservation-focused grazing. A combination of both is also commonly applied, and measures can be delivered within a development site (as mitigation) or outside the planning application boundary (as compensation), subject to appropriately secured planning controls.

Approach 1: Skylark Plots

Skylark Plots were first piloted at the RSPB's Hope Farm in 2001 and then rolled out as an agri-environment option (EF8 option in ELS) after a 3-year replicated trial proved that they were remarkably successful at boosting Skylark productivity in winter cereals. A Skylark Plot is a small undrilled or sprayed fallow patch created inside a field of winter cereal crop, designed to habitat for breeding Skylarks. However, Skylarks do not nest within the plots, rather the plots provide a valuable foraging area and enable the birds to access densely cropped fields from the ground (Fox, 2022). According to the UK government's Environmental Land Management Scheme (ELMS) action-sheet "AHW4: Skylark plots", the plots must be sited in large, open winter-cereal fields of 5 ha or more (Morris, et al., 2004). They should be located away from field edges, tramlines, poles or pylons (for example around 50 m or more from the boundary). Plots are most effective when each patch is at least 16 m^2 in area. Two plots per hectare in winter cereals is known to boost chick production; however there appears to be no published evidence with regards to numbers of plots per pair in a mitigation context, particularly when set against the 'no net loss of habitat' principle set out in policy and guidance.

Skylark Plots have been applied as mitigation for multiple solar developments, including both locally determined projects and Development Consent Orders (DCOs). These include projects in Essex (2024), Bedfordshire (2024) Lincolnshire (2023, 2024), South Cambridgeshire (2023) and North Yorkshire (2022), often at a nominal 2:1 ratio of plots to displaced territories. However, this ratio appears to be derived from government advice on agri-environment payments and therefore lacks an empirical foundation with regards to mitigation. Consequently, skylark plots can be valuable where feasible to adopt, but a cost-benefit assessment may inform where they can work best or where to deploy alternative and/or complementary measures that are beneficial to skylark conservation, such as managed meadow grassland, set-aside, and spring sown cereals. Moreover, it is questionable that Skylark plots can be aligned with other nature conservation objectives given the limited ecological value of most arable crops. Consequently, although plots can be valuable where feasible to adopt, their cost–benefit justification for long-term mitigation remains uncertain, and it is likely that conservation managed meadow grassland, set-aside, and spring sown cereals are more beneficial to Skylark conservation overall.

Approach 2: Meadow Grassland Creation and Alternative Cropping

The creation of meadow grassland outside the footprint of the panels is likely to be beneficial to Skylarks as it can provide a permanently (operational lifetime) reliable habitat; however, benefits will only be realised if the meadow supports a diverse sward and is managed following conservation principles. Where this can be achieved, pairs which nest within permanent grassland are likely to consistently have a higher number of breeding attempts than those in winter sown crops, and therefore potentially raise more chicks. Permanent meadow creation therefore provides stable, long-term conditions and supports increased invertebrate mass and a stable foraging resource. Where permanent meadow cannot be implemented and managed for Skylarks, spring-sown cereals and areas of set-aside offer suitable alternatives which are likely to boost breeding productivity levels above intensive arable land.
While it may not produce a quantified one-to-one replacement of territories, meadow creation, spring-sown cereal and set-aside align with accepted mitigation principles for other priority species (e.g., Linnet, Yellowhammer, Hedgehog and Brown Hare).

Published Mitigation Frameworks

Fox (2022)
Fox proposed a prototype mitigation strategy specifically for solar developments, quantifying breeding territories within and around sites to calculate compensatory land requirements. The method prescribes management actions such as Skylark Plots, uncultivated margins (for foraging), and low-intensity set-aside. Fox does not argue for mitigation of all breeding pairs, rather suggests that the user determines a relative percentage of breeding pairs for which mitigation may be considered. What degree of mitigation is used is up to the ecologist and the developer to judge. The Fox framework has informed several planning submissions in Lincolnshire and Norfolk (2022–2024), though published monitoring data are limited.

Arventus 'Skylark Metric' (2025)
This online metric standardises the calculation of Skylark impacts and mitigation benefits, aiming to provide transparency for planners and developers. It has been piloted on projects across East Anglia and the South-west (2024–2025). RSPB and Natural England have had sight of the metric and have thus far raised no significant concerns, although the approach is not yet peer-reviewed. It relies on cropping data and a combination of territory density by habitat type, derived from research and survey data where available and so builds on the approach set out in the Fox paper. It aims to quantify the increased carrying capacity (through increased breeding success/productivity) of birds in adjacent fields once the land within solar farms moves from the baseline habitat (often arable) to high quality grassland; the metric terms this the 'foraging uplift'. The metric also allows for 'off-site' mitigation land to be brought into the calculation, as needed. The metric calculates the potential displacement/loss of individuals and identifies where this falls below the uplift provided by any proposed mitigation. However, the metric does not specify what an acceptable displacement/loss of individuals may be. This should be determined on a site by site basis in consultation with the appropriate determining body.

Wider Ecological Benefits versus Losses

New ground-mounted solar development will usually involve changes to local habitat structures and land, albeit less so than most other forms of development and solar farms typically provide substantive habitat improvements. Whilst changes of habitat can lead to the displacement of ground-nesting birds, it simultaneously creates long-term opportunities for biodiversity enhancement when designed and managed sensitively. Planning decision makers should consider both the ecological impacts and the ecological benefits of a solar farm development.

Ecological Change and Habitat Function

The conversion of intensively managed arable land to permanent grassland under solar farm operation significantly reduces disturbance, chemical inputs, and soil erosion. This shift in land management supports increases in soil health, vegetation diversity, and invertebrate abundance, which together enhance ecosystem function. These outcomes contribute to the recovery of a wide range of declining farmland birds and other species.

Balancing Losses and Gains

Decision-makers should recognise that the effects of solar developments on Skylarks are not absolute habitat losses, but rather they can provide continued use for foraging by nearby pairs where present. While nesting will cease within land area used for the solar array itself, foraging and territorial behaviour frequently continues, at least within the margins of the development footprint.

This displacement of Skylarks and other species contrasts with permanent habitat losses associated with most built development types, where land ceases to function as a habitat of conservation value altogether. When combined with appropriate habitat management, solar farms are capable of maintaining, and in many cases improving, local overall ecological integrity for a wide range of species of conservation value.

Policy Compliance and Natural England Standing Advice

There is a no express legal or policy requirement for a pair-for-pair or like-for-like replacement of individual members of a species population through mitigation or compensation measures. Even in the case of Great Crested Newts or bats, which are protected by Annex 1 of the Habitats Directive and therefore given the highest level of international legal protection, there is no obligation for individual animal-for-animal replacement. Should this approach be applied to all species of Principal Importance, which includes numerous widespread birds and other animals, including Hedgehog, Brown Hares and Common Toads, it would be prohibitive to most forms of development. A like-for-like replacement of individuals is not an approach applied to other directly comparable species and other forms of development. As such, whilst it is appropriate for planning decisions to fully consider population impacts based on a site-level population, it does not follow that mitigation must be delivered on a pair-for-pair basis to ensure policy compliance.

Proportionate Decision-Making

Planning decisions relating to breeding bird impacts from solar farm developments should be proportionate, consistent, and aligned with the wider policy framework. Impacts on species of comparable legal and policy status should be treated consistently across different forms of development. Refusal of a solar farm development solely based on residual breeding Skylark displacement risks presents a narrow and disproportionate interpretation of policy, particularly where an application will lead to positive impacts on other species of identical status.

Proportionality should also reflect the characteristics of solar development itself. Ground-mounted solar farms are temporary, and reversible land uses that retain the underlying soil resource and generally involve limited ground disturbance. Over their operational life they can support significant ecological enhancement, particularly where land is transitioned from intensive agricultural management to low-input grassland and habitat mosaics. When considered alongside their role in climate change mitigation, solar farms can therefore deliver wider environmental co-benefits, including improved soil condition, pollinator habitat provision, and reductions in agrochemical inputs; all of which contribute to the objectives of the UK Government's Nature Recovery Green Paper (DEFRA, 2022). Decision-making should recognise both the limited and manageable nature of ecological effects and the potential for solar schemes to contribute positively to broader biodiversity and nature recovery objectives.

Recommended Considerations for Decision Makers

The relationship between solar farm development and Skylark conservation requires a proportionate, evidence-led approach that balances biodiversity considerations with our obligations on renewable energy targets for 2035 and the urgent need to decarbonise the UK's energy under legally binding net zero commitments. Decision-makers should assess each application within this broader context, ensuring compliance with national and local policy while recognising the ecological opportunities associated with well-managed solar farms. Given the number of variables that are possible with each individual project, it is critical to ensure a suitably qualified ornithologist has the relevant information to make a professional judgement on the level of mitigation and compensation required for a development, based on the local circumstances.

Robust and Relevant Baseline Information

To determine the value of a proposed development site for Skylarks and inform mitigation requirements, breeding bird surveys should be undertaken and crop rotation data obtained to enable the use of a metric approach. Breeding bird surveys of the development site are likely to be necessary, and these should ideally also cover proposed mitigation areas where practical. In some cases, access to surrounding land is not possible, or candidate mitigation areas may not have been identified or agreed at the point of survey. Where this is the case, cropping data and published research on average territory densities can be used to assist in identifying the Skylark carrying capacity of candidate mitigation areas.

Apply Consistency and Proportionality in Policy Tests

The effect of development on Skylarks should be considered consistently with those for other species of Principal Importance. Decision-makers should recognise that policy does not require the absolute avoidance of all individual-level impacts where these are recognised during impact assessment. Mitigation can be partial (in terms of numbers of individuals or pairs) without failing wider policy tests where wider biodiversity benefits are provided. In practical terms, this means that small-scale, localised displacements within a solar array do not automatically require mitigation, especially where broader population-level outcomes are maintained.

Interpret Natural England's Standing Advice Flexibly and Consistently

Natural England's standing advice on wild birds sets out the mitigation hierarchy of avoidance, reduction, and compensation. For all birds, this hierarchy should be interpreted considering the available evidence:

- Avoidance: Prioritise site selection to exclude areas of high biodiversity value, such as natural grasslands.
- Reduction: Incorporate design features such as open grassland areas, wildflower strips, and low-intensity management under and between solar arrays.
- Mitigation and Compensation: Deliver habitat creation or enhancement, either within or beyond the site boundary, that demonstrably supports Skylark foraging and breeding productivity.

Secure Long-Term Management and Monitoring

Where mitigation or compensation measures are required, LPAs should ensure that management commitments are secured for the operational life of the solar farm through an appropriate legally binding mechanism. Monitoring should be proportionate to project scale but sufficient to evidence continued compliance with planning requirements and any relevant biodiversity gain objectives.

Recognise Wider Ecological Benefits in Planning Balance Considerations

Decision-makers should evaluate Skylark impacts in the context of wider biodiversity and ecosystem service gains. Well-managed solar farms deliver:

- Long-term reductions in chemical inputs and soil degradation.
- Habitat creation for pollinators, small mammals, and other farmland birds, including many species with identical designated status as Skylarks.
- Landscape-scale enhancement of ecological networks, and
- Measurable contributions to Biodiversity Net Gain and Nature Recovery objectives.

Refusal of proposals based on breeding Skylark displacement alone is potentially disproportionate and inconsistent with the legal and policy framework, including Natural England's standing advice. Whilst it is fully recognised that Skylark populations must be maintained and recovered, effects must be balanced against the broader biodiversity enhancements delivered by solar farms, which are now demonstrated through independent research and recognised by conservation organisations.

Integrate Skylark Considerations with BNG and Nature Recovery Frameworks

Skylark mitigation for a solar farm can be designed as an integral part of a project's BNG commitments by embedding targeted habitat features that support breeding and foraging into the landscape design and long-term management plans. For example, establishing meadow managed specifically for conservation can support Skylark nesting and feeding, depending on scale and location. Beyond individual site obligations, aligning Skylark mitigation with emerging Local Nature Recovery Strategies (LNRSs) and wider nature recovery frameworks strengthens both local ecosystem resilience and strategic conservation priorities. In England, LNRSs map habitats and set local biodiversity priorities, and they are increasingly embedded in planning policy and the BNG system so that habitat creation in priority locations can attract enhanced biodiversity value. By situating solar farm habitat enhancements (e.g., grassland or wildflower areas beneficial to Skylarks and associated species) within or adjacent to LNRS-identified opportunities, projects can contribute to coherent landscape-scale nature recovery, support delivery of local biodiversity priorities, and ensure compliance with formal policy approaches under national and local environmental frameworks. This supports the policy emphasis on strategic-scale nature recovery and ensures that solar developments contribute meaningfully to local biodiversity priorities.

Conclusions

Solar farm development represents a form of land use that can deliver meaningful biodiversity enhancements when appropriately located, designed and managed. Evidence presented in this Topic Paper indicates that, although Skylarks do not nest within solar panel arrays, solar farms can continue to function as part of the wider agricultural habitat used by breeding pairs, albeit restricted to the margins of a panelled area. The transition from intensively managed arable land to permanent grassland beneath and around solar infrastructure can improve habitat structure, increase invertebrate abundance, and provide reliable foraging resources for breeding birds in surrounding areas; however, this is strongly dependent on habitat management within the solar farm, and the availability of nearby nesting locations.

National planning policy does not require the elimination of all localised ecological effects, nor does it mandate the direct replacement of individual breeding pairs. Instead, the policy framework emphasises proportionate mitigation. In this context, the displacement of Skylarks from nesting within solar arrays should be considered alongside the wider ecological outcomes associated with well-managed solar farm sites. Overall, solar developments should seek to safeguard and enhance the natural environment, and to identify opportunities for the conservation, enhancement and recovery of habitats and species of Principal Importance.

Whilst local level impacts must be fully assessed, mitigation measures must be proportionate and reasonable, so should focus on improving habitat quality and breeding productivity at an appropriate scale, rather than attempting to mitigate for all displaced territories. Conservation-managed grassland, set-aside, and low-intensity cropping regimes are likely to provide durable Skylark over a prolonged period. Where evidence is not yet available, an appropriate level of monitoring should be in place to develop a more robust evidence base going forwards.

Solar farms have the potential to contribute positively to farmland biodiversity. Decision-makers should therefore apply an evidence-led and proportionate approach that recognises both the manageable nature of Skylark impacts and the opportunities solar developments provide for long-term ecological enhancement within modern intensive agricultural landscapes.

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Appendix D: Cumilative Impact Assessment of developments within 2 km of Solar Development Sites 208 (excluding Solar Development Site 5)

Application reference	Development	Distance	Ground-nesting bird summary
ZG2023/0557/SCN	Solar farm (Noventum Power Ltd)	Adjacent/overlapping Solar Development Site (SDS) 3 and 4	6 skylark territories; 8 skylark plots proposed.
ZG2024/1129/FULM	Solar farm and BESS	1.55 km E of SDS 8	14 skylark territories; 14 skylark plots secured (agreed with NYC)
ZG2024/1099/SCN	BESS (Screening)	1.8 km SW of SDS 6	No significant effects identified.
G2024/1101/FULM	Mushroom/algae facility	11 m S of SDS 7	No ground-nesting birds identified.
ZG2023/1152/OUTM	150 dwellings	1.15 km SE of SDS 8	One skylark territory recorded; no significant effects.
ZG2023/1033/FULM	62 dwellings	1.6 km SE of SDS 8	Low bird numbers; no ground nesting bird mitigation proposed.
ZG2024/1155/SCN	BESS (Screening)	870 m SW of SDS 6	No significant effects identified.
ZG2023/1356/OUTM	110 dwellings	1.05 km SE of SDS 8	No ground-nesting birds recorded.
ZG2023/0774/FULM	106 dwellings	670 m NW of SDS 7	No ground-nesting birds recorded.
ZG2024/0605/SCN	Solar farm and BESS (Screening)	1.55 km E of SDS 8	No ecological data submitted.
ZG2023/0481/SCN	Solar farm (Screening)	50 m E of SDS 7	No ecological data submitted.
ZG2025/1019/FULM	75 dwellings	1.55 km SE of SDS 8	Mitigation proposed through skylark plots/arable habitat (15 ha) management.
ZG2025/0983/OUTM	Up to 180 dwellings	400 m W of SDS 7	Two probable skylark territories- unsuccessful due to land management (harvesting); no mitigation proposed.

Appendix E: Breeding Bird Survey Report 2025- increases in red and amber listed species abundances

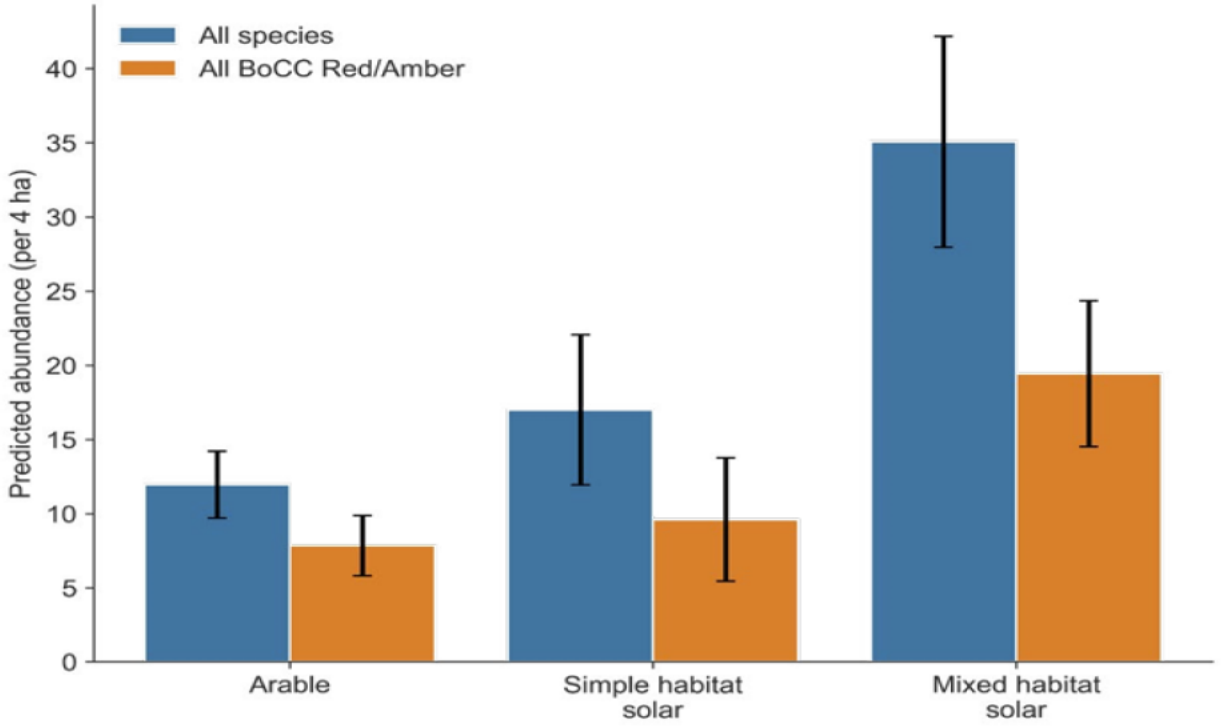

Figure 6: Predicted bird abundance ±SE per four hectares for all, and BoCC Red- or Amber-listed species of bird across the three different land-use classifications.

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