

Heckington Fen Solar Park

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ES Technical Note– Additional Ecology Information

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1. INTRODUCTION

- 1.1 This technical note provides further information relating to ecological surveys undertaken at Heckington Fen (hereafter referred to as the Site)¹. This information is provided following Issue Specific Hearing 4 (ISH4) on 22nd November 2023. During ISH4 North Kesteven District Council's (NKDC) ecological advisors, AECOM, raised the following points:
- Further information was required in relation to the methodologies used to survey for quail (*Coturnix coturnix*)
 - Further information was required in relation to the methodologies used to survey for arable flora, and
 - Further information was required in relation to the habitat condition assessments performed to inform the Biodiversity Net Gain (BNG) Assessment (REP2-049).
- 1.2 Following ISH4 NKDC's ecological advisors also requested further information in relation to the design of the proposed Skylark (*Alauda arvensis*) mitigation strategy.
- 1.3 This technical note forms part of the DCO hearings Deadline 3 submissions and provides further information on the following:
- Survey methodology for quail and arable flora, and
 - The design of skylark mitigation strategies.
- 1.4 On the 29th November 2023 DEFRA updated the BNG Metric from version 4.0 to the 'Statutory Metric' and also published a number of draft statutory instruments in relation to the application of BNG within the development process. Therefore, the Applicant is now proposing to review these documents and provide the requested BNG updates at Deadline 4, 16th January 2024, incorporating any changes in approach brought about by the new information released.

2. SURVEY METHODS FOR QUAIL

- 2.1 Standard breeding season survey methodologies for quail comprise the following; six visits, roughly a fortnight apart, from mid-May to the end of July. With surveys undertaken at dusk, between about half an hour before and an hour after sunset.
- 2.2 The Site has been subject to breeding bird surveys by Ecotricity in 2008-2010 and 2015-2018 with the latest suite of surveys undertaken at the Site between 2021-2022 to inform the DCO application.
- 2.3 Breeding bird surveys during 2021-22 comprised four visits between 22nd April 2021 and 10th June 2021 to the energy park site and four visits to the extended buffer zone and grid connection corridor between 2nd April 2022 and 23rd June

¹ APP-074, Environmental Statement - Figure 1.1 - Order Limits

2022. All surveys were undertaken between dusk and midday. During these surveys no quail were recorded.

- 2.4 Survey limitations, presented at paragraph 8.2.9 in Appendix 8.10 (APP-200) make the following reference to survey for quail:

“Being a highly irruptive summer visitor, numbers of quail arriving into Britain each summer are highly variable. Affected by complex rotational cropping regimes, precise future breeding locations on agricultural land are also impossible to predict (Cramp & Simmons 1979, Balmer et al 2013). Quail is therefore always a problem species for bird survey, locations/numbers found breeding in one year usually having little relevance to future years. Despite intensive searching specifically for quail during both the 2021 and 2022 breeding bird surveys, none was recorded. Nevertheless birds could be present in future years. Because of the limited value of the results of current surveys, pragmatic mitigation is therefore outlined in para 8.5.9”

- 2.5 Paragraph 8.5.9 of Appendix 8.10 (APP-200) include the following proposed mitigation for quail:

“No quail were found to be present during the extensive breeding bird surveys undertaken. However, the unavoidable difficulties of predicting future locations of breeding quail (outlined in para 8.2.9) means that the importance of the Proposed Development site and grid connection for breeding quail immediately prior to development is unknown. All parts of the proposed Energy Park and grid connection where any development work is planned to take place during March-July should therefore be carefully surveyed for breeding quail prior to any work commencing. Should any breeding quail be found, work should not be undertaken until after the quail have finished breeding.”

- 2.6 The Applicant acknowledges the concerns raised by NKDC’s ecological advisors in relation to the timing and frequency of breeding bird surveys for quail and has secured through the DCO process further pre-commencement surveys for this species.
- 2.7 The Outline Construction Environment Management Plan (oCEMP) (REP2-071) sets out the requirement to undertake a suite of pre-commencement surveys in 2024. These surveys include specific surveys for quail following the methodologies set out in paragraph 2.2 of this technical note. The requirement to undertake these pre-commencement surveys are secured through Requirement 13 of the DCO.
- 2.8 The Applicant further recognises that the mitigation set out in paragraph 8.5.9 of Appendix 8.10 (APP-200) only addresses the mitigation of impacts arising during the construction process and does not fully recognise the long-term impacts upon potential quail populations resulting from the permanent loss of breeding habitat to the proposed development.
- 2.9 Whilst it is considered that mitigation proposals for skylark and yellow wagtail will also address any need to mitigate for the potential loss of quail breeding habitat, should 2024 surveys highlight the presence of breeding quail onsite an assessment and proposals for mitigation will be submitted to the relevant decision makers prior to commencement. The need to provide this scheme of mitigation will be secured through the CEMP at Deadline 4 of the DCO.

3. SURVEY METHODS FOR ARABLE FLORA

- 3.1 During ISH4 NKDC's ecological advisors also sought clarity regarding Figure 3, 'Arable Plots' presented in Appendix 8.6 (APP-195). This figure presents arable plot locations as point data.
- 3.2 The Applicant can confirm that surveys for arable flora were undertaken at the field scale with arable plots surveyed as opposed to point locations. Section 2.3 of Appendix 8.6 (APP-195) sets out the methods used for arable plant surveys. Fifteen areas were selected and surveyed. Of the ninety-one species recorded during survey, only four were found to be on the IAPA list of species of conservation concern: Green Field-speedwell (*Veronica agrestis*), Smooth Tare (*Ervum tetraspermum*), Small-flowered Crane's-bill (*Geranium pusillum*) and Wild Radish (*Raphanus raphanistrum* ssp. *raphanistrum*). These species were species of local concern with scores of 1-2 only. Consequently, the arable plots surveyed achieved low scores, with four plots scoring 3 marks, two plots scoring 2 marks, one plot scoring 1 mark and eight plots lacking any species on the IAPA list.

4. SKYLARK MITIGATION STRATEGY

- 4.1 The Outline Landscape Environmental Management Plan (REP2-073) sets out the project level approach to skylark mitigation. The Applicant has since undertaken further analysis of its skylark mitigation strategy to ensure the level of provision is sufficient to effectively mitigate for the impacts arising from the scheme. The approach, which broadly follows Fox (2022)², is summarised below.
- 4.2 A total of 124 skylark territories were recoded within the energy park site during surveys in 2021-2022.
- 4.3 The proposed development comprises the following mitigation mechanisms:
- The provision of enhanced foraging resource onsite via arable reversion;
 - A proportion of territories absorbed naturally off-site through displacement;
 - A proportion of on-site territory retention through habitat creation, and
 - A proportion of 'off-site' suitable habitat and skylark plot provision on land outside of the Order Limits but under option and within the Applicant's control (Figure 1.4 Field Plan APP-077).
- 4.4 The effectiveness of these mitigation mechanisms have been assessed using published territory densities for skylark per hectare/per habitat type³ compared to the relative hectareage of habitat provision on and off-site to form the following assumptions:
- Enhanced foraging resource will be provided across the site through the scheme of proposed arable reversion;
 - Of the 124 territories present it is assumed that there is potential for 28 territories to be absorbed into the surrounding arable landscape

² Fox, H (2022) Blithe Spirit. Are skylarks being overlooked in impact assessment in InPractice 117 (2022), pg. 47-54

³ Donald, P.F. (2004). The Skylark. Poyser, London.

immediately adjacent to the site, due to their proximity to the site boundary;

- It is also assumed that through the enhancement of approximately 90ha⁴ of grazing land and enhanced species rich grassland a further 50 territories could be successfully retained on-site;
- Through the management of approximately 62ha of arable land off-site (but within the option area and within the applicants control), a further 17-30 territories could be mitigated for, dependent upon the levels and type of agricultural activity⁵ within the 62ha of available additional land. This area would also include 124 skylark plots (at a density of 2 plots per ha).

- 4.5 Based upon these assumptions, and after considering existing skylark territories recorded in the wider landscape to ensure the proposals deliver the necessary additionality, the proposed mitigation strategy has the potential to mitigate for between 77-87% of the 124 skylark territories recorded on site in 2021-22.
- 4.6 Therefore, given the breeding bird population of skylarks within Lincolnshire is in the region of 70,000 breeding pairs, it is considered that the Proposed Development has incorporated a strategy that ensures that impacts arising from habitat loss upon ground nesting birds have been minimised to the point of no residual adverse effects occurring.
- 4.7 The Applicant proposes that this assessment will be undertaken again following pre-commencement breeding bird surveys in 2024.
- 4.8 The Applicant has also insured that some flexibility has been built into the mitigation wording provided in the Outline Landscape Environmental Management Plan (REP2-073) to enable a contribution to a strategic, landscape scale, form of skylark mitigation to be made if required, (if land currently under option and within the applicant's control becomes economically unviable).
- 4.9 This contribution would focus upon ensuring the 13-23% of skylark territories that currently remain un-mitigated for are adequately mitigated for across the wider landscape. The Applicant would seek to deliver this mitigation in partnership with local stakeholders such as the local Wildlife Trust and other solar farm developers in the locality with similar needs.
- 4.10 It is intended to update the skylark mitigation strategy set out in the OLEMP at Deadline 4, to incorporate the above information following feedback from NKDC and their advisors.

⁴ 26.34ha boundaries of solar arrays, 50.45ha species rich grassland, and 13.28ha enhanced arable margins

⁵ Assuming either winter wheat production or land managed as set-aside