Appendix 2: Ecology- Further Information Report

Belvoir Solar Farm

on behalf of JBM Solar Project 10 Ltd.

Further Information Report

avian ecology

Document Control				
Project Name:	Belvoir Solar Farm			
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V1	09/09/2022	Draft	B. Walker *MSc MCIEEM*	N. Robinson *MSc BSc (Hons) ACIEEM*
V2	20/09/2022	Final	B. Walker *MSc MCIEEM*	N. Robinson *MSc BSc (Hons) ACIEEM*

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1 INTRODUCTION

1.1.1 Avian Ecology Ltd. was commissioned in 2020 by JBM Solar Projects 10 Ltd. to undertake baseline ecological and ornithological studies and impact assessment in relation to the Belvoir Solar Farm application (the Proposed Development submitted to Leicestershire County Council (Planning Ref. 22/00537/FUL) and presented within Chapter 5: 'Biodiversity' (the 'Biodiversity Chapter') of the Belvoir Solar Farm Environmental Statement.

1.1.2 The Biodiversity Chapter was informed by the following baseline studies; a desk study, an extended phase 1 habitat survey, preliminary bat roost (PRA) survey, great crested newt (GCN) *Triturus cristatus* environmental-DNA (eDNA) surveys, breeding bird survey, wintering bird surveys, badger *Meles meles* survey. A biodiversity net gain (BNG) calculation was also undertaken for the Proposed Development and presented as part of the Biodiversity Chapter.

1.1.3 Since submission to planning, the Site layout and landscape plan have been updated to remove approximately 3ha of solar panels in the east of the Site, in response to consultation with Bottesford Parish Council, and as shown on the updated **Site Layout and Landscape Plan; P19-2022-10_Q** (dated 18th August 2022).

1.1.4 This Further Information Report, has subsequently been prepared in response to these updates and and to reflect comments received from Natural England (NE) (correspondence dated 30th May 2022, NE Ref. 392576; **Annex A**) in relation to the Muston Meadows Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR).

2 BASELINE CONDITIONS

2.1.1 The Report draws upon baseline data as detailed within the Biodiversity Chapter, which was collected during 2019/2020. Baseline ecological and ornithological conditions remain unchanged and are detailed and illustrated in the Biodiversity Chapter, associated technical appendices and figures.

2.1.2 Methodologies for the surveys and Biodiversity Chapter, are set out within the Appendices of this Report and section 5.2 of the Biodiversity Chapter. Zones of Influence also remain the same to those within the Biodiversity Chapter, section 5.3.

2.1.3 The following sections and updated technical appendices, are however provided to summarise and reflect changes in the Site boundary and Proposed Development layout:

- Statutory Designated Sites for Nature Conservation;
- Great Crested Newt (Amphibians);
- Biodiversity Net Gain;
- Appendix 5.2: Habitats and Species Baseline Report;
- Appendix 5.3: Winter Bird Survey Report;
- Appendix 5.4: Breeding Bird Survey Report;
- Appendix 5.5: Confidential Badger Report;
- Appendix 5.6: Great Crested Newt Presence/Absence eDNA Report;
- Appendix 5.7: Biodiversity Management Plan;

- Appendix 5.8: Biodiversity Net Gain Metric Spreadsheet; and,
- Appendix 5.9: Construction Environment Management Plan.

2.2 Designated Sites for Nature Conservation

2.2.1 Designated sites remain unchanged from those described within the Biodiversity Chapter.

2.3 Habitats

2.3.1 The amended Proposed Development layout has reduced the Site area, with the removal of approximately 3ha of arable field along the eastern boundary. Field boundary features such as hedgerows, a dry ditch and scattered trees as well as pond P2, in this area will no longer be impacted by the work as they are now situated outside of the Site boundary.

2.3.2 No other habitats will be affected by the amended Proposed Development layout.

2.4 Protected and Notable Species

2.4.1 The baseline information regarding species has been updated and is presented within Appendices 5.1 to 5.9, to reflect changes in the Site boundary and Proposed Development Layout.

2.4.2 No additional protected and/or notable species will be affected by the proposed development.

3 UPDATED ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

3.1.1 The Biodiversity Chapter provides an assessment of potential effects from the Proposed Development upon ecological and ornithological features. The conclusions of the assessment presented within the Biodiversity Chapter are unchanged following an update to the Site boundary and layout of the Proposed Development and no significant effects upon any ecological or ornithological feature will occur.

3.1.2 Clarity is however provided on the following features and in response to the consultation response received from Natural England;

- Statutory Designated Sites for Nature Conservation; and
- Great crested newt.

3.1.3 On the basis of a change in the Site boundary and layout Biodiversity Net Gain assessment for the Proposed Development has also been updated. This is presented in Appendix 5.8 and summarised in Section 3.4.

3.2 Statutory Designated Sites for Nature Conservation

3.2.1 The Muston Meadows Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR) are located immediately adjacent to the east of the Site as shown on **Figure 5.2.2** in **Appendix 5.2**. These sites are both designated for their neutral clay grassland habitat interests, including large populations of green winged orchids *Orchis morio*. Great crested newts *Triturus cristatus* are also noted as being present in ponds within the statutory designated sites.

Construction

3.2.2 During construction, perimeter fencing will be erected to maintain a buffer of between 11.2m and 19.5m from the Site and the Muston Meadows SSSI/NNR. In addition, solar panel construction will be set back further, between 14.5m and 27.2m, as shown on **Figure A,** which shows these measurements in relation to the Site Layout and Landscape Plan.

3.2.3 This will ensure habitats within the SSSI/NNR will not be directly impacted by the construction of the Proposed Development.

Figure A. Buffer measurements, adjacent to Muston Meadows SSSI/NNR.

3.2.4 Indirect effects, such as temporary dust creation and pollution events are assessed within the Biodiversity Chapter, together with outline pollution control measures. These measures are further detailed within Appendix 5.9: Construction and Environmental Management Plan (CEMP), and which will ensure no indirect effects on nearby designated sites.

3.2.5 Potential effects upon the Muston Meadows SSSI/NNR as a result of construction of the Proposed Development will therefore be **negligible** and **not significant** and which is unchanged from the conclusions of the Biodiversity Chapter.

Operation

3.2.6 In response to comments received from NE (Annex A), the areas adjacent to the SSSI/NNR, including two new fields to the north, will either be left to naturally regenerate over time or if possible, these areas be lain with green hay or seeds provided from nearby donor sites within the SSSI. This will encourage the development of habitats with local provenance. However, the provision of green hay or seeds depends upon their availability and will be subject to further consultation with landowners/managers/NE.

3.2.7 Management for these adjacent areas as well as the remainder of the Site is set out within the Biodiversity Management Plan (BMP) and includes measures such as low intensity sheep grazing.

3.2.8 The solar farm will be relatively undisturbed except for the occasional maintenance visit. Day to day management practices, such as cleaning of the solar panels are discussed within the CEMP (Appendix 5.9, and which will ensure no indirect effects on the Muston Meadows SSSI/NNR.

3.2.9 Over time and with natural regeneration, it is considered that the grassland adjacent to Muston Meadows SSSI/NNR will develop into neutral grassland with the potential for colonisation of green winged orchids and use by GCN.

3.2.10 As a result, it is considered that the operation of the solar farm will have a **minor positive** effect on statutory designated sites.

Decommissioning

3.2.11 The assessment conclusions presented within the Biodiversity Chapter in relation to the decommissioning of the Proposed Development, are unchanged.

3.3 Great Crested Newt

3.3.1 The Site is considered to be largely unsuitable for GCN (and other amphibians) with suitable habitats restricted only to hedgerow bases and associated field margins. Ponds within the Site were found to be dry during surveys and therefore considered to be permanently dry. A GCN survey of one pond, P2 in the wider area found GCN to be likely absent, however GCN are noted within the citation, as being present in ponds within the adjacent Muston Meadows SSSI/NNR.

Construction

3.3.2 Construction phase effects (in the absence of suitable mitigation measures) may occur as a result of inadvertent killing or injury to individual GCN if present in terrestrial habitat within the working zone. The risk of this occurring is considered to be low, as the works will be temporary and are almost entirely confined to habitat of limited value to GCN (arable with limited foraging or refuge opportunities), with more favourable habitat that GCN are more likely to utilise (field boundary features etc.) largely retained and protected with buffer zones.

3.3.3 The risk of direct impacts on individual animals or indirectly through habitat loss or disturbance affecting individuals or the local population through displacement or loss of habitat for foraging or shelter is considered to be limited as a result. No long term habitat severance or fragmentation effects will occur during the (temporary) construction phase that could adversely affect the favourable conservation status of local GCN populations including Muston Meadows SSSI/NNR population.

3.3.4 The potential for short-term disturbance or inadvertent harm to individual animals during the construction phase has been considered, in particular where works occur in proximity to the SSSI/NNR and ponds in the wider area that were not surveyed. The risk is however assessed to be low, when taking into account the following:

- The construction lies within agriculturally managed land of negligible/low value to GCN who favour higher suitability habitat located outside the Proposed Development footprint;
- As a precaution, works within higher value habitat (hedgerow removal and field margins) will be carried out under a Reasonable Avoidance Measures Method Statement (RAMS) presented within the CEMP (Appendix 5.9) to ensure that any individual GCN which may be present within the Site will be protected during construction works; and,
- No ponds will be lost or damaged as a result of the construction and operation of the Proposed Development.

3.3.5 Potential effects therefore relate to groundworks within a defined short time period, within areas of negligible/low value to GCN. With the implementation of the RAMS the construction of the Proposed Development is therefore not considered to have the potential for adverse effects on the favourable conservation status of local GCN populations including Muston Meadows SSSI/NNR population.

3.3.6 It is therefore considered that construction of the development will result in **negligible** magnitude impact on a receptor of **Local** value which would have a **negligible** effect on local populations of this species and is **not significant** and this is unchanged from the conclusions of the Biodiversity Chapter.

Operational

3.3.7 During the operational phase there would be no additional habitat loss (and hence loss of potential terrestrial foraging or shelter) over and above that assessed and discussed under Construction Effects. Total land take for solar farm developments is typically low (less than 5% footprint on the ground). The operation phase will have no habitat loss effects on neighbouring habitats and any amphibian populations they may support. There will be no operational effects on off-site ponds in the wider area.

3.3.8 New grassland, pond/wet scrape and hedgerow habitat as well as hibernacula, insect hotels and log piles, once established, will provide enhanced habitats which will be suitable for amphibians, if present. In particular, GCN will benefit from enhanced potential breeding, refuge, foraging and dispersal opportunities across the Site, compared to existing agricultural land.

3.3.9 Habitats on Site will be managed throughout the operational life of the Proposed Development to maintain their habitat interest (i.e to maintain botanically diverse grassland and hedgerows) in accordance with the BMP.

3.3.10 As a result, operational effects of the Proposed Development on reptiles and amphibians such as GCN including the population within SSSI/NNR, once new planting and habitat creation has established are assessed to result in a **low positive** magnitude impact and a **minor positive** effect which is **not significant.**

3.3.11 Solar farms operate with little intervention of disturbance required, limited to occasional maintenance visits.

3.3.12 Indirect impacts on GCN from maintenance visits such as panel cleaning is discussed in detail within the CEMP (**Appendix 5.9**). The ecological impacts of cleaning and other maintenance visits are considered to be **negligible** and **not significant** and likely to be less disruptive than ongoing normal farming operations.

Decommissioning

3.3.13 The assessment conclusions presented within the Biodiversity Chapter in relation to the decommissioning of the Proposed Development, are unchanged.

3.4 Biodiversity Net Gain

3.4.1 A Biodiversity Net Gain (BNG) Assessment has been undertaken for the Proposed Development and was presented as part of the Biodiversity Chapter (**Section 5.6**). The assessment considers land take, habitat creation and any biodiversity enhancements that will accompany the Proposed Development and is assessed using the Defra Metric Biodiversity Net Gain Calculator (version 3.1)[1]. The assessment

[1] http://publications.naturalengland.org.uk/publication/6049804846366720

adopts precautionary assumptions in relation to build area, cropping and grassland quality, and which demonstrates an overall net gain in biodiversity units.

3.4.2 The assessment has been updated to reflect the change in Site boundary and Proposed Development layout. The assessment is presented in Appendix 5.8 and summarised below.

3.4.3 BNG will be achieved through the proposed landscape and planting and habitat creation as set out in the Landscape Strategy, along with long term management as part of the BMP. Further enhancements that cannot be quantified through the Metric include new bat and bird boxes, refuge features, hibernacula, insect hotels, bee hives and log piles.

Area Habitats

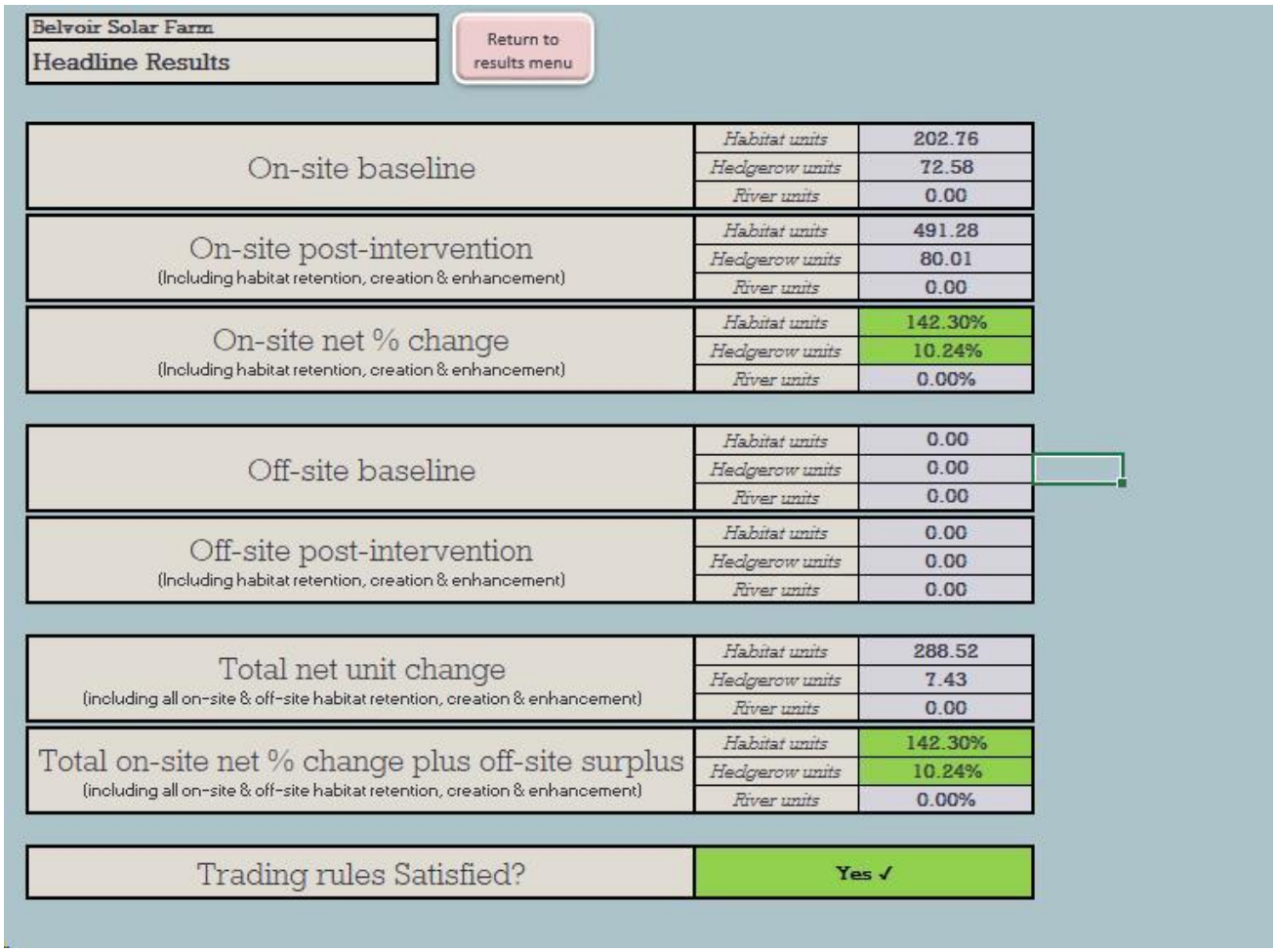
3.4.4 The Application Site total 99.95ha, the majority of which consists of arable cropland. Small areas of land include broadleaved woodland and tall ruderal habitats, making up 0.29ha and 0.3ha, respectively. Ponds within the Site make up an additional 0.01ha. Baseline habitats within the Site total 202.76 biodiversity units.

3.4.5 Broadleaf woodland and ponds, totaling 2.4 biodiversity units, will be retained throughout the construction and operation of the Proposed Development, resulting in a total loss of 200.36 biodiversity units.

3.4.6 Habitat creation will include the sowing of grassland, of which 59.42ha will be under the solar panels, 10.93ha species diverse meadow planting and 24.74ha of natural regeneration/hay grassland adjacent to the SSSI/NNR and which totals 487.47 biodiversity units.

3.4.7 Woodland screen planting and pond creation will result in a further 0.94 biodiversity units and 0.47 biodiversity units, respectively.

3.4.8 Habitat creation as part of the Proposed Development will therefore result in a total of 488.88 units and a significant BNG of +142.30% in habitat units.



Belvoir Solar Farm Headline Results	Return to results menu	
On-site baseline	*Habitat units*	202.76
	Hedgerow units	72.58
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	491.28
	Hedgerow units	80.01
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	142.30%
	Hedgerow units	10.24%
	River units	0.00%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	288.52
	Hedgerow units	7.43
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	142.30%
	Hedgerow units	10.24%
	River units	0.00%
Trading rules Satisfied?	Yes ✓	

Figure B. Headline Results of Metric 3.1

4 SUMMARY

4.1.1 The change of the Site boundary, to reduce the size of the Site as well as comments from Natural England have been addressed herein.

4.1.2 Findings within this Report are considered to be the same as the Biodiversity Chapter for both construction and operation, except for the following receptors:

- Statutory Designated Sites;
- Amphibians; and
- Biodiversity Net Gain.

Statutory Designated Sites

4.1.3 A buffer zone of between 11.2m and 19.5m will be adopted between the adjacent Muston Meadows SSSI/NNR and the perimeter fence of the Site. Construction of the solar panels themselves are sited further still, between 14.5m and 27.2m. The development will have no direct impacts on any statutory designated site and indirect effects such as dust creation etc are discussed in more detail within the CEMP.

4.1.4 Habitat enhancement measures within the Site, including creation of grassland adjacent to Muston Meadows, either through natural regeneration and/or using green hay/seed from a donor site will

complement the statutory designated site and potentially expand the range of the locally important green winged orchid. In addition, new ponds/wet scrapes as well as the installation of log piles, insect hotels and hibernacula could benefit populations of GCN present within Muston Meadows. The cessation of agricultural practices through the creation of a relatively undisturbed grassland could also be of benefit in the wider landscape.

Amphibians

4.1.5 Three dry ponds are present within the Site and a GCN eDNA survey of pond P2 in the wider area returned a negative result. However, GCN are listed within the citation of Muston Meadows SSSI and they are therefore considered to be present in the wider area.

4.1.6 Works are concentrated within habitats which are largely unsuitable for GCN, such as arable. However, sections of hedgerows and field margins will be impacted by the works, which have greater value. As a precaution, works will proceed under RAMs, which will ensure the protection of individual GCN which may be potentially using the Site and ensure legislative compliance.

4.1.7 Habitat enhancement upon completion, including the creation of new ponds/wet scrapes, species diverse grassland, log piles, insect hotels and hibernacula will benefit any GCN populations that may be present.

Biodiversity Net Gain

4.1.8 The Defra Metric 3.1 has been used to calculate biodiversity net gain for the Site and which demonstrates that the Proposed Development will result in a significant BNG with +142.30% for habitats and +10.24% for hedgerows.

Annex A; Natural England Consultation Response; 30th May 2022

Date: 30 May 2022
Our ref: 392576
Your ref: 22/00537/FUL

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Melton Borough Council

BY EMAIL ONLY

Dear Gareth Elliott

Planning consultation: Construction of a Solar Farm together with associated work, equipment and infrastructure.
Location: Fields OS 6700 6722 And 5200, Muston Lane, Easthorpe

Thank you for your consultation on the above dated 05 May 2022 which was received by Natural England on 05 May 2022.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

SUMMARY OF NATURAL ENGLAND'S ADVICE

NO OBJECTION - SUBJECT TO APPROPRIATE MITIGATION BEING SECURED

We consider that without appropriate mitigation the application could:

- damage or destroy the interest features for which Muston Meadows Site of Special Scientific Interest has been notified.

In order to mitigate these adverse effects and make the development acceptable, the following mitigation measures are required / or the following mitigation options should be secured:

- Additional buffering to the SSSI

Natural England's further advice on designated sites/landscapes and advice on other natural environment issues is set out below.

Further advice on mitigation

Natural England welcome the general consciousness of the SSSI adjacent to the SSSI, however, we consider that a larger 'buffer' area alongside the SSSI should be implemented to ensure no impacts occur to the interest features of the SSSI.

The activities during construction and maintenance of the panels have the potential to cause adverse impacts via dust creation, sediment runoff, pollution events (i.e. oils/fuels). We note the 11m buffer which is described within the EIA, but would want to see a larger buffer area alongside the SSSI, both during construction and for the lifetime of the development.

We would also like to note that the SSSI citation includes GCN as an interest feature, thus, any impacts to the GCN population would constitute an adverse impact to the SSSI. The field margins and edges of the development site may be used as terrestrial habitat by GCN; we believe this further indicates the need for larger buffering alongside the SSSI.

We would like to see a *further* buffer area of at least 10m along the boundary of the SSSI. This buffer area would not only help to prevent any impacts, but would provide a significant benefit for the SSSI. Where the buffer, along with the entirety of the development site, is maintained appropriately, species from the SSSI are likely to establish in these areas and create a high quality extension to the SSSI. In time, this area may be suitable for inclusion in an official extension to the Muston Meadows NNR.

Other advice

In addition, Natural England would advise on the following issues.

Landscape Strategy

Natural England welcome the intention to create high quality grassland/meadow habitats across the development site, and do not consider the current proposals would cause harm to the SSSI. However, we consider this development to provide a rare opportunity to take the route of natural regeneration. We note that the natural regeneration route may give rise to less biodiversity credits through the Biodiversity Metric, however, the development is currently indicating a gain in well over the expected amount; natural regeneration, in the long term, may provide better opportunities for Nature.

The presence of Muston Meadows SSSI adjacent to the site means there is a natural seed source directly adjacent, which, if given the chance, would likely colonise the development site; over time, create high quality species rich habitat akin to the SSSI itself. The Green Winged Orchids present on the SSSI would be unlikely to colonise the development site should it be sown with a plethora of different species; extending the range of the Orchid would be a huge win for local biodiversity.

We note two parcels of the development site have been shown on the landscape masterplan to be ‘Complimentary species diverse grassland habitat’. We are unable to find detail of what this comprises and would like to take this opportunity to state that these areas would be best suited to natural regeneration, due to their proximity to the SSSI. We would also ask that the parcel directly north of the SSSI be included within this ‘Complimentary species diverse grassland habitat’, or better yet, natural regeneration.

Natural England would be happy to organise a meeting with the applicant to discuss the possibility of taking a more natural regeneration route across the site, or just in the adjoining land parcels, to secure the best opportunities for nature. Should the applicant wish to discuss this further, I would be happy for them to get in contact with me.

Biodiversity Management Plan

We have reviewed the Biodiversity Management plan, and once again, do not consider that any harm will come to the SSSI as a result of it, however, we do have the following comments:

- 3.1.1 states security fencing will be erected around the site, we would recommend that this fencing should be permeable by mammals, to prevent cutting off their access to the site; thus enhancing the biodiversity value.
- 4.1.9 states a grazing mix will be sown beneath panels, to be grazed by sheep. We welcome the intention to use low intensity grazing to manage the site, however, we note that Native sheep will graze the natural regeneration of the site; that there is not necessarily a need to seed these areas.
- 4.1.15 states that if there is an abundance of annual or perennial weeds, herbicide will be

used. We would like to not that arable weeds can often be highly beneficial to biodiversity and should not be removed where possible.
- 4.1.25 states that bark will be imported to the site. We note this bark may contain non-native/non-local species and/or pests. We recommend care being taken to ensure an appropriate bark substrate is used, to prevent any such issues.
- 5.1.2 states that small area of bare ground will be tolerated. We welcome this and would like to see small areas of bare ground created where they are not present naturally, to achieve the benefits described.
- 5.1.4 states a number of harmful weeds will be removed. We note that these weeds are still useful for biodiversity. We recognise that where sheep will graze the site this may cause some issues, however, would like to see these species left in situ in the borders and areas which are not being used for grazing.
- 5.2.2 states that all dead wood will be removed. We would like to see deadwood left on the site, as it is very important for biodiversity.
- 6.3 – We would like to welcome the inclusion of contingency measures.

Biodiversity Net Gain

Natural England would like to welcome the use of the Biodiversity Metric 3.0, which showed a clear gain of 15.78% in hedgerow units and 173.38% in habitat units.

Protected Species

For advice on protected species, please see Natural England's Standing Advice.

District Level Licencing for Great Crested Newts

Natural England note that the development lies within an area which has an active District Level Licensing scheme. Where a licence may be required for great crested newt, DLL provides a quicker, simpler licensing approach. Some advantages of the DLL scheme include:

- **Speed**: On average, obtaining a DLL brings a time saving of 77 days compared to mitigation licencing.
- **Simplicity**: DLL does not require extensive on-site survey or mitigation measures by the developer, hence the licencing process is much more streamlined than mitigation licencing.
- **Efficiency of conservation**: 85% of the developer's investment goes directly towards habitat creation/restoration, compared to approximately 16% under mitigation licencing.

Please see this link for further information on how to join a district level licensing scheme to manage great crested newt (GCN) populations if you are developing land in certain parts of England.

Best and Most Versatile Agricultural Land

From the documents accompanying the consultation we consider this application falls outside the scope of the Development Management Procedure Order (as amended) consultation arrangements, as the proposed development would not appear to lead to the loss of over 20 ha 'best and most versatile' (BMV) agricultural land.

For this reason, we do not propose to make any detailed comments in relation to agricultural land quality and soils, although sustainable soil management should aim to minimise risks to the ecosystem services which soils provide, through appropriate site design / masterplan / Green Infrastructure. In addition, impacts to soil are less likely as the solar panels would be secured to the ground by steel piles with limited soil disturbance and could be removed in the future with no permanent loss of agricultural land quality likely to occur, provided the appropriate soil management is employed and the development is undertaken to high standards

Natural England would advise that any grant of planning permission should be made subject to conditions to safeguard soil resources, including the provision of soil resource information in line

with the Defra guidance Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Further guidance is available in The British Society of Soil Science Guidance Note Benefitting from Soil Management in Development and Construction which we recommend is followed in order to safeguard soil resources as part of the overall sustainability of the development.

If, however, you consider the proposal has significant implications for further loss of BMV agricultural land, we would be pleased to discuss the matter further.

Further general advice on consideration of protected species and other natural environment issues is provided at Annex A.

Please note that if your authority is minded to grant planning permission contrary to the advice in this letter, you are required under Section 28I (6) of the Wildlife and Countryside Act 1981 (as amended) to notify Natural England of the permission, the terms on which it is proposed to grant it and how, if at all, your authority has taken account of Natural England's advice. You must also allow a further period of 21 days before the operation can commence.

Should the developer wish to discuss the detail of measures to mitigate the effects described above with Natural England, we recommend that they seek advice through our Discretionary Advice Service.

If you have any queries relating to the advice in this letter please contact me on Click here to enter text..

State whether we need to be consulted on discharge of conditions or obligations. Choose an item.. *(only use second option where there are very specific issues we need to see again).*

Should the proposal change, please consult us again.

Yours Choose an item.

Click here to enter text.
Click here to enter text.

APPENDIX 5.1 ECOLOGICAL IMPACT ASSESSMENT METHODOLOGY

5.1 INTRODUCTION

5.1.1 The ecological impact assessment (EcIA) contained in this Chapter has been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) guidance[1] and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended). It focuses on those activities that could potentially generate significant environmental effects on ecological receptors.

5.1.2 Ecological Impact Assessment (EcIA) is defined within the CIEEM guidelines as **'a process of identifying, quantifying and evaluating the potential effects of development related or other proposed actions on habitats, species and ecosystems'**. The CIEEM guidelines stipulate that it is not necessary to carry out a detailed assessment of impacts upon ecological receptors that are sufficiently widespread, unthreatened and resilient to impacts of the proposed development. As such, the assessment considers effects upon designated sites and ecological receptors which are considered important on the basis of relevant guidance and professional judgement.

5.1.3 Where ecological receptors are not considered sufficiently important as to warrant a detailed assessment, or where they would not be significantly affected on the basis of baseline information, these are 'scoped out' of the assessment. Mitigation measures for such receptors may however, still be outlined as appropriate to reduce and/or avoid any potentially adverse effects or to ensure legislative compliance

5.1.4 The assessment includes the following stages:

- determination and evaluation of important/sensitive ecological receptors;
- identification and characterisation of impacts;
- outline of mitigating measures to avoid and reduce significant impacts;
- assessment of the significance of any residual effects after such measures; and,
- identification of appropriate compensation measures to offset significant residual effects.

5.1.5 For the purpose of the assessment, the terms 'impacts' and 'effects' are referred to in accordance with the definitions set out in the CIEEM Guidelines as follows:

- Impact: Actions resulting in changes to an ecological feature, for example, removing a hedgerow;
- Effect: Outcome to an ecological feature from an impact, for example, the changes experienced by the local population of a species arising from the loss of the hedgerow.

5.2 ZONES OF INFLUENCE

5.2.1 The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposal and associated activities. The zones of influence that extend beyond the direct land-take required for

[1] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

the proposed development have been identified based upon the nature of the completed project and the construction activities to be undertaken, informed by the consultation and Scoping process and current CIEEM and Natural England guidance where available. The zone of influence will therefore vary for different ecological features depending on their sensitivity to an environmental change. The zones of influence were used to establish the scope of baseline ecological surveys and the extent of survey area and desk study.

5.2.2 Zones of influence for the Site and the Proposed Development that have been considered are as follows:

5.3 SIGNIFICANT EFFECTS

5.3.1 Ecological Impact Assessment (EcIA) is defined within the CIEEM guidelines as **'a process of identifying, quantifying and evaluating the potential effects of development related or other proposed actions on habitats, species and ecosystems'**

5.3.2 The EIA Regulations[2] require the description of the **'likely significant environmental effects of the proposed development on the environment'** (Regulation 18(3)(b)).

5.3.3 To determine the overall significance of each ecological effect, judgements on the sensitivity of the receptor(s) and the magnitude of impact from the Proposed Development are considered together in order to determine whether or not an effect is likely to be significant. This involves a combination of quantitative and qualitative assessment and the application of professional judgement.

5.3.4 For the purposes of this assessment, effects are categorised as significant or not significant in line with the EIA Regulations. The assessment considers effects at different geographic scales i.e. where effects may be discernible at a local scale but are not considered significant in the context of the EIA Regulations. For the purpose of the assessment, moderate and major effects are deemed to be 'significant' in EIA terms unless stated otherwise.

5.3.5 A 'significant effect' is considered to be an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general.

5.3.6 CIEEM guidelines on ecological impact assessment note that:

'A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures.'

5.3.7 For ease of reference **Table A5.1** below sets out adapted CIEEM terminology which also shows the equivalent EIA terms as used in Chapter 5: Biodiversity.

Table A5.1: EIA regulations and CIEEM Terminolgy.

Effect	Significance	CIEEM Definition
Substantial or Moderate	Significant	Positive effect on ecological

[2] Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

beneficial		integrity or conservation status at a County, National or International geographic scale
Minor Beneficial	Not significant	Positive effect on ecological integrity or conservation status, discernible/significant in ecological terms at a Local geographic scale only
Negligible or Neutral	Not significant or neutral	No discernible or significant on ecological integrity or conservation status (e.g. species or habitat).
Minor Adverse	Not significant	Adverse effect on ecological integrity or conservation status, discernible/significant in ecological terms at a Local geographic scale only.
Moderate or Substantial Adverse	Significant	Adverse effect on ecological integrity or conservation status at a County, National or International geographic scale.

5.4 ASSESSMENT

5.4.1 The Proposed Development has been assessed as having a lifetime of 40 years for the purpose of this assessment and ecological effects have been described in terms of their duration as short, medium term and long-term as follows:

- Short-term effects are defined as 0-3 years;
- Medium terms effects are defined as 3-15 years;
- Long term effects are defined as > 15 years

5.4.2 The ecological impact assessment includes:

- An evaluation of identified important ecological features and potential receptors; faunal species, habitats and vegetation (as appropriate) on an international, national and regional basis;
- A description and evaluation of the potential effects of the Proposed Development on statutory and non-statutory sites designated for nature conservation;
- A description and evaluation of the potential effects of the Proposed Development on species and habitats;
- Mitigation measures implemented to address any identified significant adverse effects;
- An assessment of cumulative effects;
- Identification of any residual effects after mitigation; and
- Identification of opportunities for biodiversity enhancement.

5.4.3 For the purposes of this assessment the importance or sensitivity of an ecological feature is considered within the context of a defined geographical area, ranging from International (high value) to Site (low/negligible), as detailed in **Table A5.2**.

Table A5.2: Value/ Sensitivity Assessment

Value or Sensitivity of Receptor /	**Definition examples**

Geographic Scale of Importance	
High - International / European	Greater than a UK scale, typically valued at a European level such as internationally designated sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and/ or Ramsar sites) or proposed/ candidate site (pSPA or cSAC), large area of a habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of the larger whole, large population of an internationally important species or site supporting such a species (or supplying a critical element of their habitat requirement) or species listed in Annex IV of the Habitats Directive.
High - National (UK)	UK: A nationally designated site (e.g. Site of Special Scientific Interest) or a discrete area which meets the selection criteria for national designation. An area of a priority habitat listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006 which constitutes a significant proportion of the UK resource of that habitat. A regularly occurring, regionally significant population of any nationally important species listed as a UK BAP / Biodiversity List and priority species listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006, and Species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Medium Regional / County	Locally designated sites (Local Nature Reserves, County or Local Wildlife Sites). Areas of priority habitat which constitutes a significant proportion of the County's resource of that habitat. A regularly occurring, locally significant population of any nationally important species listed as a UK BAP / priority species and priority species listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006, and Species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Low - Local	Local area around the Proposed Development. For example areas of priority habitat which are not large enough to meet the criteria for County value, or small but sustainable

	populations of a protected or notable species
Low/Negligible - Site	Considered within the context of the Site only.

5.4.4 Effects on ecological features have been assessed based upon the interaction between the importance, or sensitivity, of the feature and the magnitude of change it is likely to experience. In accordance with the CIEEM guidelines (2018), an EcIA need only assess in detail, impacts upon important ecological features i.e. those that are considered important and potentially affected. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable. Where ecological features are not considered important enough to warrant further consideration, or where they will not be significantly affected, these are scoped out of the assessment presented here, and justification for exclusion is provided.

5.4.5 Relevant European, national and local guidance from governments and specialist organisations has been referred to in order to determine the importance (or 'sensitivity') of ecological features. Importance has also been determined using professional judgement and taking account of the results of baseline surveys and the functional role of features within the context of the geographical area.

5.4.6 Importance does not necessarily relate solely to the level of legal protection that a feature receives and ecological features may be important for a variety of reasons, such as their connectivity to a designated site and the rarity of species or the geographical location of species relative to their known range.

5.4.7 Once identified, potential impacts are described making reference to the following characteristics as appropriate: positive or negative, extent, magnitude, duration, timing, frequency, and, reversibility. The judgements on magnitude may need to be adjusted (either up or down) to reflect the duration of the change (i.e. short, medium or long term) and whether it is potentially reversible. The assessment also identifies areas where no change is anticipated and the resulting effect is described as **'not discernible'** or **'none'**.

5.4.8 Ecological effects are described as far as possible and where available information allows in terms of the parameters detailed in **Table A5.3**

5.4.9 Magnitude of effect, based on the effects that the Proposed Development would have upon the resource/receptor, is considered within the range of high, medium, low, negligible. Consideration is given to scale, duration of impact/effect, and extent of Proposed Development with reference to the definitions in **Table A5.3**. The assessment considers how existing baseline conditions may change over time, as for example the baseline conditions could alter through operational land use, in the form of differing management and natural growth or succession of habitats.

Table A5.3 Environmental Parameters

Environmental Parameter	Description
Magnitude	The 'size' or amount of an effect is referred to as the magnitude and is determined on a quantitative basis where possible supported by professional judgement.
Extent	The area over which an effect occurs. The magnitude and extent of an effect may be synonymous
Duration	The time over which an effect is expected to last prior to the recovery or

	replacement of the ecological receptor. This can be considered in terms of life cycles of species or regeneration of habitats. The duration may be longer than the duration of an activity
Reversibility	Reversible (or temporary) effects are those that occur during the lifetime of the development and where spontaneous recovery or mitigation allows recovery within a reasonable timescale. Permanent effects are those which cannot be recreated within the proposed development or there is no reasonable chance that actions can be undertaken to reverse it.
Timing and Frequency	The timing of effects in relation to important seasonal and/or life cycle constraints. The frequency with which activities and simultaneous effects would take place can be an important determinant.

5.4.10 The assessment of effects is based upon the assessments of magnitude of effects and sensitivity of the resource/receptor to come to a professional judgement of how important this effect is. The magnitude of change effected on ecological receptors is described as set out in **Table A5.4**. The likelihood or probability that an effect will occur is addressed as far as possible based on available information. Whilst it is reasonably straightforward to identify effects that are certain to occur, or conversely will not occur, it is generally more difficult to assign a quantified level to occurrences defined as likely, unlikely or highly unlikely. In these circumstances, professional judgement has been used, with reasoning supported by available evidence

Table A5.4: Magnitude of Impact/Change

Magnitude	Criteria
High	The change may negatively or positively affect the conservation status of a site or species population, in terms of the coherence of its ecological structure and function, that sustains the habitat, complex of habitats and/or the population levels of species of interest.
Moderate	Conservation status of a site or species population will not be negatively or positively affected, but some element of the functioning of the site or population might be affected and the change to the site/ population is likely to be significant in terms of its ability to sustain some part of itself in the long term.
Low	Neither of the above applies, but some minor negative or positive change is evident on a temporary basis, or the change affects extent of habitat or individuals of a species abundant in the local area.
Negligible	No observable effect in either direction

5.4.11 For an effect to be significant, the ecological integrity or conservation status of a sensitive feature must be influenced in some way. It may be that the effect is substantial in magnitude or scale, irreversible, has a long-term effect, or coincides with a critical period in a species' life-cycle. Where uncertainty or limitations exist, this is acknowledged.

5.4.12 It is recognized that discernible effects can also occur at a local geographic scale which are not sufficiently severe to be assessed as 'significant' in accordance with the EIA approach, and do not require specific mitigation, but nonetheless merit discussion. In the interest of completeness these effects are discussed in Chapter 5: Biodiversity in relation to general construction good practices to be adopted to avoid or minimise low-level or minor disruption to local features, including for example standard pollution prevention and control measures.