



Ralph Cox  
Principal Planner, Norfolk County Council  
Sent by email only: ralph.cox@norfolk.gov.uk

03 December 2021

Dear Mr Cox,

**Aldeby Solar Park, Ref: FUL/2021/0015**

Many thanks for the comments on the above planning application which were included in two letters dated 07/11/21 (Catherine Dew to Ralph Cox) and 11/11/21 (Nick Johnson to Liz Russell, Arcus). Please find below our responses to the comments which we have presented in a letter format to allow a targeted response to the key concerns raised and to clarify details previously presented within the EcIA. Where appropriate, the Council's comments are cited for reference in grey italics, although only those from the later letter are included where comments were repeated.

*...the Environmental Statement (ES) does not address all of the potential impacts set out in Natural's England's guidance of the impact of solar farms on birds, bats and general ecology: Evidence review of the impact of solar farms on birds, bats and general ecology 2016 - NEER012. [11/11/21]*

Natural England's review continues to be an important document in defining the scope of our solar assessments and we are glad that it also influences the Council's response. The review is broad in scope and raises many questions but it does not function as a methodological guide or protocol to undertaking ecological impact assessments of solar developments. Rather, it provides a synthesis of current evidence, knowledge gaps and inferences from different types and scales of developments around the world – many of which are not directly relevant to the submitted application – and thus is not intended to define all of the ecological effects to be assessed by individual developments.

We recognise that the ecological impacts of operational solar developments in the UK are relatively poorly understood compared with more established types of developments. Importantly, however, the ecological effects associated with the construction phase of solar developments are not unique to this type of development and so are very well understood. Furthermore, whilst the potential adverse operational effects of solar developments are the focus of the NE review and your comments, it should be recognised that solar developments have a unique potential to provide medium-term benefits to biodiversity (e.g., habitat enhancements to bolster populations) as well as long-term benefits (e.g., decarbonising the energy supply to address climate change, the biggest existential threat to biodiversity).

As with any ecological assessment – EIA and HRA in particular – practitioners have the discretion to focus an assessment on the most substantive ecological issues i.e., those that are likely, significant or with legal implications. It is not necessary to explicitly scope out all issues that are not relevant to a development since doing so would be an unnecessary burden on all assessments, particularly for smaller scale developments such as this. Consequently, the assessment presented is considered to accurately identify the important ecological features and types of impacts for assessment and addresses them in a way that is proportionate to the Development. Nonetheless, we have extracted from our assessment relevant information related to all effects, expanding on some of them, and presented these in a table, provided at the end of this letter, to offer clarity.

## Stages of Development

*...the Ecological Impact Assessment (EcIA) should, in line with CIEEM guidelines for EcIA, assess potential impacts associated with all stages of the proposal from site clearance, construction, operation, maintenance, closure and decommissioning, and as such the assessment is incomplete.*  
[11/11/21]

The EcIA currently addresses the impacts of the construction and operational phases of the Development for each feature, although we recognise that these can be more clearly defined and that the decommissioning phase should be more fully addressed.

The construction phase of solar developments is somewhat different from other built developments in that it takes place over a relatively short timescale and very little site preparation is required before the installation of infrastructure. Consequently, our assessment assumes that all site activities leading up to the day of commissioning are considered as part of the construction phase. Similarly, the very low level of maintenance required for the Development is assumed to be part of the operational phase. Closure and decommissioning are also considered together and the approach is described in section 2.6 of the ES: *The effects of decommissioning are similar to, or often of a lesser magnitude than, construction effects and have been included in Chapter 4. However, there can be a high degree of uncertainty regarding decommissioning as engineering approaches and technologies are likely to change over the operational life of the Development. Notice will be given to the Council in advance of commencement of the decommissioning works, with all necessary licenses or permits being acquired. Decommissioning will be timed to minimise its environmental impact.*

Consequently, the ecological effects of decommissioning are considered to have been addressed by the assessment of construction effects presented to date. It is reasonable to assume that the decommissioning will be subject to appropriate prevailing development controls (i.e., legislation, guidance and best practice) at the time of undertaking, which is not possible to predict in detail at this time. For clarity, impacts at different stages of development are clearly separated in the table following this letter.

## Site Selection

*The application site is in close proximity to an ecological sensitive area being located 800 m north of several nationally and internationally designated ecological sites, including Broadland Special Protection Area (SPA) and Ramsar, The Broads Special Area of Conservation (SAC) and Barnby Broad and Marches Site of Special Scientific Interest (SSSI). The Site is also adjacent to the west of Boons Heath County Wildlife Site. Given the environmental sensitivity of the wider area I am concerned that no reference is made in section 2.7.1 of the ES (site selection) to the proximity of the site to the SPA/Ramsar/SAC/SSSI. As this is an important consideration in site selection (and identification of impacts).* [07/11/21]

Although not expressly addressed within the "Site Selection" section of the ES (section 2.7), the potential effects on the nearby designated sites (SPA, SAC, Ramsar site, etc.) are addressed where relevant throughout the ES. Furthermore, the EIA Screening Report and the opinions received from the Council and Natural England identified the nearby designated sites as potentially sensitive features and thus were influential in guiding the scope of the assessment from an early stage.

We have not completed a Habitat Regulations Assessment (HRA) but we trust that the assessment of ecological impacts presented in the ES (and summarised in the table below) is sufficient to conclude that there will be no Likely Significant Effects, as required to consent the project under the Habitat Regulations (as amended).

## Cumulative Effects

*Please can you clarify under the Cumulative Effects section at 5.9 the other plans/projects have been assessed in reaching this conclusion. Because of the location of the site near to sites protected under European law, we will need to also assess whether an Appropriate Assessment will need to be carried out. I am still awaiting confirmation from the County Ecologist whether*

*there is sufficient information in the application to do this or whether I need anything further.*  
[11/11/21]

A review of South Norfolk, East Suffolk and Norfolk County Councils' online planning application databases was carried out to inform the assessment.

The nearest ground-mounted solar schemes are opposite the River Waveney Valley in East Suffolk, south of the A146, where there are three solar farms, the closest of which is 4 km to the south east of the Site. Given the large distance, there is very limited potential for impacts from these schemes to act in combination on important ecological features. Other planning applications in the vicinity of the Development include retention of equestrian centre buildings to the southwest of the Site, retention of equestrian use of land, a new equestrian centre and extension of use of a model aircraft flying ground. Due to the rural location of the Site, the overall number applications in the area is low.

The small size of the Site and localised nature of the potential effects means there are a limited range of impact-pathways arising from the Development, and due to their very low likelihood and/or magnitude, the potential for cumulative effects with other developments and plans is negligible. A full search of planning applications in the vicinity of the designated sites has not been carried out and is not necessary to support the assessment.

#### Clarifications

##### *Spacing between panels*

*Could the applicant clarify the spacing between the panels and confirm that spacing will be sufficient to allow sunlight to reach vegetation and soil, ensuring that the proposed species rich grassland will be viable* [11/11/21]

The spacing of the panels will vary within the Site subject to the land gradient but will be consistent with the industry standard for such developments which is typically 2000–6000 mm. This prevents shadow effects on the panels, but also allows good levels of light to reach the ground beneath. For the Development, the overall density of panels is much lower than typical solar developments because it needs to accommodate the existing gas infrastructure, which will have benefits for the habitats beneath and between the panels. Furthermore, the intention is to manage the existing grassland rather than to try to establish wildflower meadow or suchlike, recognising that the history of the Site combined with the Development type would make the creation of new wildflower habitats unduly challenging. The spacing of the panels will allow the development of a high-value, heterogenous grassland.

##### *Restoration plan and construction timescales*

*The ES should also assess the ecology that will have colonized the site from the onsite planting that still needs to take place as part of the approved Final Restoration Masterplan required by condition 1 of planning permission reference C/7/2018/7007...* [11/11/21]

The Development has been redesigned to accommodate features of the agreed landfill restoration plan; however, it is understood that these habitat features may be planted soon and will be in situ at the time of construction.

If consented, the developer has no intention to delay construction of the Development which will minimise the time available for habitat features to establish. No delays are foreseen that could prevent construction for three years but, if this was the case, it is expected that any planted features, such as woodland or hedgerow habitats, would still be small and of limited value. The mitigation proposed includes precautionary measures that would safeguard all potential species that may occur at the Site with maturing or changing habitats, and the recommendation for an ECoW would allow mitigation to be reactive to any changes in presence or status.

As such, the implementation of the restoration does not change the assessment, and the proposed mitigation is considered adequate to prevent adverse effects and meet legislative obligations.

Experience of relevant personal

*In line with CIEEM guidelines it is requested that the names and qualifications/experience of the ecologist who completed the ecological surveys and prepared the ES chapter is provided to the planning authority. [07/11/21]*

Surveyor: Jon Huckle CEnv MCIEEM MSc. Ecology Technical Director at Huckle Ecology. Jon has over 20 years' experience working as a professional ecologist, and since 2002 has been working as an ecological consultant for a number of different organisations on a wide variety of projects.

EcIA lead author (ecology): Hannah Shone ACIEEM. Consultant Ecologist at Arcus. Hannah is an experienced ecologist with over five years of professional experience on a wide variety of projects and protected species throughout the UK.

EcIA lead author (ornithology): Matt Slaymaker ACIEEM. Principal Ornithologist at Arcus. Matt is an experienced ecologist specialised in ornithology survey and assessment, with over 15 years' professional experience, including eight years within the consultancy sector. He has worked on a variety of projects throughout the UK and overseas, including numerous solar developments.

EcIA review and QA: Dr Mike Gray CEnv MCIEEM. Principal Ecologist at Arcus. Mike has 15 years of consultancy experience with particular expertise in renewable energy developments, including providing Expert Witness at Public Inquiry. His other professional ecological experience includes academic research, public sector and third sector throughout the UK and overseas.

Yours sincerely,



**Matt Slaymaker MCIEEM**  
**Principal Ornithologist**



**Dr Mike Gray CEnv MCIEEM**  
**Principal Ecologist**

The following tables provide a summary of the potential effects at all stages of the Development.

**Construction effects, including site preparation and construction of the Development.**

Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
Habitats	Vegetation clearance/damage	Permanent and temporary loss of low value habitats. All higher value habitats (hedgerows and ponds) to be retained.	Not significant	Avoidance: Use of existing infrastructure (e.g., tracks) to limit habitat loss. Clearly demarcate/limit working areas to prevent damage to retained habitats.	Not significant
Great Crested Newt and Reptiles	Vegetation clearance and ground works	Direct harm/disturbance of individual animals. No loss of breeding sites. Not recorded and very unlikely to be present on site.	Not significant; potential legal offence.	Avoidance: Minimise vegetation clearance. Mitigate: Precautionary 'Reasonable Avoidance Measures', as per sections 5.7.4 and 5.7.5 of the ES.	Not significant; legal offence unlikely.
Bats	Vegetation clearance/damage	Damage/disturbance of roost. No roosting features present.	Not significant	No mitigation is necessary	Not significant
	Habitat disturbance	Short-term disturbance of low value foraging habitats. Construction will take place mainly during daylight hours when bats are inactive. Construction will be phased across the site so that only a small part of the site is subject to disturbance at a given time.	Not significant	Avoidance: Minimise night-time working. Mitigation: Sensitively designed night-time lighting, as per section 5.7.3 of the ES.	Not significant
Mammals (general)	Direct harm/disturbance	Entrapment in excavations. Night-time disturbance from lighting.	Not significant; potential legal offence.	Avoidance: Minimise night-time working. Mitigation: ECoW supervision. Cover/limit excavations and stockpiling. Sensitively designed night-time lighting, as per section 5.7.6 of the ES.	Not significant; legal offence unlikely.

Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
Birds (Breeding season)	Vegetation clearance	<p>Direct loss of active nests or disturbance to nesting birds. Safeguards are required to reduce or avoid direct loss of active nests.</p> <p>Disturbance is a temporary and localised effect and, overall, few breeding birds were identified within the Site and immediate surrounds. Effects will be offset by long-term benefits offered by habitat improvements.</p>	Significant adverse; potential legal offence	<p>Avoidance: Where possible, vegetation clearance will be carried out during the non-breeding season and, at any time of year, only vegetation clearance essential to the construction of the Development will be carried out.</p> <p>Mitigate: Best practice guidance to be followed, as per section 5.7.7 of the ES.</p>	Not significant
	Construction disturbance (See also: <i>Broadland SPA and Ramsar site, below</i> )	<p>Aural/visual disturbance could displace birds from the Site or surrounding area with adverse effects for survival or breeding success.</p> <p>Disturbance is a temporary and localised effect and, overall, few breeding birds were identified within the Site and immediate surrounds.</p>	Not significant	No mitigation is necessary	Not significant
Birds (Wintering)	Construction disturbance (See also: <i>Broadland SPA and Ramsar site, below</i> )	<p>Disturbance could displace birds from the area with adverse effects for their survival.</p> <p>The habitats within the Site offer low value resources for birds during the winter. The area likely supports a small number of widespread bird species and is not considered to be of importance in the context of the surrounding landscape. Immediately may support low numbers of widespread bird species. Overall, the Site and surrounds are not considered important in the context of the area or landscape.</p>	Not significant	No mitigation is necessary	Not significant

Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
The Broads SAC	Disturbance/harm of qualifying features	<p>Separated from the Site by Boon's Heath Quarry CWS, arable land interspersed by ditches, the River Waveney, and coastal floodplain and grazing marsh.</p> <p>None of the qualifying habitat features are present within or bordering the Site. Furthermore, the Site has extremely limited potential to support any of the qualifying species given its range of habitats. The site is very unlikely to be functionally linked to the SAC.</p> <p>Given the intervening distance and habitats, there is very limited opportunity for impact pathways; for example, there are no watercourses that could transmit surface water pollution.</p>	Not significant	No mitigation is necessary.	Not significant
Broadland SPA and Ramsar site	Disturbance/harm of qualifying feature	<p>Aural/visual disturbance could displace birds from the area with adverse effects for survival or on the integrity of the NSN.</p> <p>The Site does not contain habitats suitable for use by any features of the SPA. Adjacent habitats are unsuitable for breeding season features and either unsuitable or suboptimal for wintering features. As such, the Site and immediate surrounds are not considered functionally linked to the SPA.</p> <p>The wetland habitats alongside the River Waveney may support some features; however, based on available WeBS data, use is likely to be low. Given the intervening distance and habitats, there is very limited opportunity for impact pathways on the SPA or habitats adjacent to the SPA that could represent functionally linked land.</p>	Not significant	No mitigation is necessary.	Not significant
SSSI and CWS	Disturbance/harm of notified features	Given the intervening distances and habitats, and the lack of clear functional links, there is very limited opportunity for impact pathways.	Not significant	No mitigation is necessary; standard construction good practice (e.g., pollution prevention).	Not significant

**Operational effects, including presence of infrastructure and day-to-day maintenance.**

Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
Habitats	Creation and enhancement	Planting hedgerows and trees. Retaining and enhancing grassland and scrub.	Significant positive	No mitigation is necessary	Significant positive
Invertebrates	Attracted to panels	Aquatic invertebrates potentially attracted to panels instead of waterbodies, but limited evidence on subject. Effects likely to be very small given the extensive nearby wetland resources. Terrestrial habitat creation/enhancement may benefit invertebrates.	Not significant	No mitigation is necessary	Not significant
Great Crested Newt and Reptiles	Habitat change	The creation and enhancement of habitats, which will be subject to very limited intervention/disturbance, may provide higher value terrestrial habitats.	Not significant (minor positive)	No mitigation is necessary	Not significant (minor positive)
Bats	Lighting disturbance	Disturbance of flying bats by inappropriate night-time lighting.	Not significant	Avoidance: Minimise lighting. Mitigate: Design new lighting in accordance with good practice (see section 5.7.3) of the ES.	Not significant
	Habitat change	The creation and enhancement of habitats which will be subject to very limited intervention/disturbance may provide higher value terrestrial habitats. Panels will provide heterogenous landscape that may provide improved foraging (compared to open landscape).	Not significant (minor positive)	No mitigation is necessary	Not significant (minor positive)
	Collision with panels	Low suitability habitats unlikely to support diverse assemblage of bats. Limited evidence on collision risk. Most likely to be net positive effect on bats due to favourable habitat change.	Not significant (minor positive)	No mitigation is necessary	Not significant (minor positive)
Mammals	Barrier to movements	Perimeter fence may cause habitat fragmentation by impeding the movements of medium-large mammals such as badger; however, there was no evidence of badger using the Site and habitats are suboptimal.	Not significant	Mitigate: Install mammal gates in perimeter fence.	Not significant
Birds (general)	Collision	Collision with the panels may cause injury or death. Although direct mortality of birds through collisions with solar panels has been reported, many incidents occur overseas under very different scenarios to solar developments in the UK, both in terms of development	Not significant	No mitigation is necessary	Not significant



Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
		type, scale and surrounding habitat/landscape. There is a general consensus that, within the UK, the risk of harm to birds through collision with panels is very low <sup>1,2</sup> .			
	Disturbance	Maintenance requirement of the Development will be low and not significantly greater than the baseline condition. Noise will be lower than the baseline condition <sup>3</sup> .	Not significant	No mitigation is necessary	Not significant
The Broads SAC	Disturbance/harm of qualifying features	Given the intervening distance and habitats, and the lack of clear functional links (see 'Construction Effects', above, there is very limited opportunity for impact pathways.	Not significant	No mitigation is necessary	Not significant
Broadland SPA/Ramsar site	Disturbance	Maintenance requirement of the Development will be low and not significantly greater than the baseline condition. Noise will be lower than the baseline condition <sup>3</sup> . Given the intervening distance and habitats, and the lack of clear functional links (see 'Construction Effects', above, there is very limited opportunity for impact pathways.	Not significant	No mitigation is necessary	Not significant
SSSIs and CWS	Disturbance/harm of notified features	Given the intervening distances and habitats, and the lack of clear functional links, there is very limited opportunity for impact pathways.	Not significant	No mitigation is necessary	Not significant
All designated sites	Glint and Glare	A Glint and Glare Assessment (appended to the Design and Access Statement) has been undertaken and, with implementation of mitigation, concludes no significant impacts towards surrounding road users and surrounding dwellings have been identified which require appropriate mitigation. The designated sites were not assessed; however, several receptors were located between the Site and designated sites, and extrapolation of the results suggests that there would do no significant Glint or Glare visible from within the designated sites.	Not significant	No mitigation is necessary	Not significant

<sup>1</sup> Taylor, R., Conway, J., Gabb, O. & Gillespie, J. (2019) *Potential ecological impacts of ground-mounted photovoltaic solar panels*. Available online at: <https://www.bsg-ecology.com/wp-content/uploads/2019/04/Solar-Panels-and-Wildlife-Review-2019.pdf>

<sup>2</sup> Natural England (2017) *Evidence review of the impact of solar farms on birds, bats and general ecology 2016 (NEER012)* [Online] Available at: <http://publications.naturalengland.org.uk/publication/6384664523046912> (Accessed 07/07/21)

<sup>3</sup> Arcus (2021) *Aldeby Solar Park, Noise Impact Assessment*.

## Decommissioning effects

Feature	Potential Impact	Assessment of Effect/s	Significance of Effect/s	Proposed Mitigation, based on CIEEM Hierarchy	Residual Significance
All features	Include but are not limited to habitat loss, disturbance, and pollution.	Following the operational phase, the Development will be decommissioned, including the removal of the Site infrastructure. Potential effects of this work are likely similar to those during construction; however, the ecological baseline is likely to change over such a timescale and legislation and conservation priorities may differ.	Potentially adverse; potential legal offence.	Mitigation: Prior to decommissioning, it is recommended that the Site is assessed by an ecologist to identify the need for any mitigation or best practice measures, in accordance with prevailing guidance and legislation.	Not significant