



SCOPING OPINION:

Proposed Beacon Fen Energy Park

Case Reference: EN010151

Adopted by the Planning Inspectorate (on behalf of the Secretary of State) pursuant to Regulation 10 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

26 May 2023



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1. INTRODUCTION

- 1.0.1 On 19 April 2023, the Planning Inspectorate (the Inspectorate) received an application for a Scoping Opinion from Beacon Fen Energy Park Ltd (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for the proposed Beacon Fen Energy Park (the Proposed Development). The Applicant notified the Secretary of State (SoS) under Regulation 8(1)(b) of those regulations that they propose to provide an Environmental Statement (ES) in respect of the Proposed Development and by virtue of Regulation 6(2)(a), the Proposed Development is 'EIA development'.
- 1.0.2 The Applicant provided the necessary information to inform a request under EIA Regulation 10(3) in the form of a Scoping Report, available from:

<http://infrastructure.planninginspectorate.gov.uk/document/EN010151-000008>
- 1.0.3 This document is the Scoping Opinion (the Opinion) adopted by the Inspectorate on behalf of the SoS. This Opinion is made on the basis of the information provided in the Scoping Report, reflecting the Proposed Development as currently described by the Applicant. This Opinion should be read in conjunction with the Applicant's Scoping Report.
- 1.0.4 The Inspectorate has set out in the following sections of this Opinion where it has / has not agreed to scope out certain aspects / matters on the basis of the information provided as part of the Scoping Report. The Inspectorate is content that the receipt of this Scoping Opinion should not prevent the Applicant from subsequently agreeing with the relevant consultation bodies to scope such aspects / matters out of the ES, where further evidence has been provided to justify this approach. However, in order to demonstrate that the aspects / matters have been appropriately addressed, the ES should explain the reasoning for scoping them out and justify the approach taken.
- 1.0.5 Before adopting this Opinion, the Inspectorate has consulted the 'consultation bodies' listed in Appendix 1 in accordance with EIA Regulation 10(6). A list of those consultation bodies who replied within the statutory timeframe (along with copies of their comments) is provided in Appendix 2. These comments have been taken into account in the preparation of this Opinion.
- 1.0.6 The Inspectorate has published a series of advice notes on the National Infrastructure Planning website, including [Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping \(AN7\)](#). AN7 and its annexes provide guidance on EIA processes during the pre-application stages and advice to support applicants in the preparation of their ES.
- 1.0.7 Applicants should have particular regard to the standing advice in AN7, alongside other advice notes on the Planning Act 2008 (PA2008) process, available from:

<https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

- 1.0.8 This Opinion should not be construed as implying that the Inspectorate agrees with the information or comments provided by the Applicant in their request for an opinion from the Inspectorate. In particular, comments from the Inspectorate in this Opinion are without prejudice to any later decisions taken (e.g. on formal submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a Nationally Significant Infrastructure Project (NSIP) or Associated Development or development that does not require development consent.

2. OVERARCHING COMMENTS

2.1 Description of the Proposed Development

(Scoping Report Section 2)

ID	Ref	Description	Inspectorate's comments
2.1.1	Paragraph 2.3.1	Redline boundary	<p>Paragraph 2.3.1 states that Beacon Fen northern panel array area is approximately 517 hectares (ha) in size whilst Beacon Fen southern panel array area is approximately 519ha. The total area within the redline boundary, including the cable route, is not provided within Section 2 of the Scoping Report. Table 12.1 however states that the total area is 4,683.22ha. Following refinement of the cable route corridor, which is due following survey work, the ES should provide a description of the total area within the Order Limits within the project description section of the ES.</p>
2.1.2	Paragraph 2.4.2	Lighting	<p>As noted in paragraph 2.4.2 of the Scoping Report, lighting is proposed as part of the Proposed Development. However, no information is presented regarding the proposed lighting strategy, although paragraph 4.6.6 of the Scoping Report states that embedded measures will be implemented to minimise night-time lighting.</p> <p>Furthermore, the Scoping Report makes no reference to impacts from lighting associated with the construction, operation, and decommissioning of the Proposed Development on landscape and visual receptors, although Table 5.3 of the Scoping Report states that disturbance to ecological features as a result of lighting is proposed to be assessed.</p> <p>The ES should include a description of the proposed lighting strategy and assess the potential for likely significant effects to occur on receptors in relation to lighting during the construction, operation,</p>

ID	Ref	Description	Inspectorate's comments
			<p>and decommissioning phases. This should include consideration of effects relating to intermittent lighting sources such as motion-activated security lighting if relevant. The ES should also evidence any measures taken to minimise impacts on sensitive human and ecological receptors.</p>
2.1.3	Sections 2.4 and 2.5	Flexibility	<p>The Inspectorate notes the Applicant's intention to seek flexibility within the design of the Proposed Development, including relating to the layout and type of technology of infrastructure elements, as well as the location of construction compounds. It is also noted in paragraph 2.5.4 that there is the potential for above ground / overhead lines to be used instead of buried cabling for the electricity export connection to the National Grid.</p> <p>The Scoping Report does not confirm whether this flexibility will be included in the Development Consent Order (DCO).</p> <p>The Inspectorate expects that, at the point an application is made, the description of the Proposed Development be sufficiently detailed to include the design, size, capacity, technology, and locations of the different elements of the Proposed Development. This should include the footprint and heights (and depths) of the structures (relevant to existing ground levels), as well as land-use requirements for all elements and phases of the Proposed Development. The project description should be supported (as necessary) by figures, cross-sections, and drawings which should be clearly and appropriately referenced.</p> <p>Where flexibility is sought, the ES should clearly set out the maximum design parameters that would apply for each option assessed and how these have been used to inform an adequate assessment in the ES, recognising that this may differ depending on the assessment being undertaken. The Applicant should consider whether, as a result of flexibility in the design, multiple different</p>

ID	Ref	Description	Inspectorate's comments
			<p>worst-case scenarios may be more appropriate for each aspect chapter of the ES.</p> <p>The description of the Proposed Development in the ES must not be so wide that it is insufficiently certain to comply with the requirements of Regulation 14 of the EIA Regulations. The Inspectorate's draws the Applicant's attention to Advice Note 9: Rochdale Envelope, which states that <i>"it will be for the authority responsible for issuing the development consent to decide whether it is satisfied, given the nature of the project in question, that it has 'full knowledge' of its likely significant effects on the environment."</i> The Inspectorate notes that paragraph 2.9.2 of the Scoping Report outlines the proposed maximum parameters to be assessed.</p>
2.1.4	Paragraph 2.7.2	Construction phase	<p>The Scoping Report states that construction is anticipated to last approximately 24 to 36 months. Limited information regarding the construction phase has been provided within the Scoping Report. The ES should describe the assumptions regarding the assessment of the construction phase, including the proposed construction activities (e.g., the proposed piling method and whether open trench or trenchless techniques for crossings will be used), associated plant and machinery, and details of the construction compounds.</p>
2.1.5	Paragraph 2.7.3	Operational lifespan	<p>The Scoping Report states that the Proposed Development would have an operational life of approximately 60 years. It is stated (in paragraph 2.7.3) that the condition of equipment will be reviewed <i>"at the end of design life"</i> to determine whether operation can continue. It is therefore unclear whether the design life of the infrastructure would be less than the quoted 60 years and therefore whether there is potential for the comprehensive replacement of panels and/or associated infrastructure, or whether there is potential for the operational phase of the Proposed Development to extend beyond 60 years.</p>

ID	Ref	Description	Inspectorate's comments
			<p>Solar developments are typically considered to be c. 40-year developments with panel degradation cited as a limiting factor on project lifespan. On that basis, the Inspectorate considers that it is likely that all panels would have to be replaced at least once during the operational life of the project. Although there is potential for technological improvements to extend this design life, the ES should ensure that a worst-case scenario is assessed. Where there is the potential for comprehensive replacement of infrastructure during the operational lifespan of the Proposed Development this should be appropriately assessed. The ES should provide estimates of types and quantities of waste expected as well as an assessment of likely significant effects associated with the generation and disposal of waste if relevant.</p> <p>The ES should ensure that the operational lifespan assessed within the ES is consistent with the time limit specified within the DCO. Where a time-limited consent is not being sought within the DCO the ES should assume any likely significant effects would be permanent in nature.</p>
2.1.6	Paragraph 11.6.2	Panel type	<p>Paragraph 11.6.2 of the Scoping Report states that depending on the output of the assessment, there is potential to change the angle of PV panels or use tracking panels rather than fixed panels. There is no reference to tracking panels within the project description provided within Section 2 of the Scoping Report. The ES should ensure the description of the Proposed Development is consistent with that assessed within the aspect chapters and the maximum parameters secured through the DCO to ensure that a worst-case scenario is assessed. For example, where tracking panels exceed 4.5m in height this needs to be adequately assessed within corresponding aspect chapters.</p>

2.2 EIA Methodology and Scope of Assessment

(Scoping Report Section 3)

ID	Ref	Description	Inspectorate's comments
2.2.1	Paragraphs 3.2.1 – 3.2.13	Significant effects	<p>Paragraph 3.2.3 of the Scoping Report notes that the terms 'impact' and 'effect' are often used interchangeably but have specific meanings within the context of EIA. Paragraph 3.2.13 and Table 3.4 describe the relationship between potential impacts and significant effects. However, the General Approach provided in paragraph 3.2.1 of the Scoping Report only refers to impacts (e.g., residual impacts). Schedule 4 of the EIA Regulations requires the ES to provide an assessment of likely significant effects. The ES should ensure that significant effects are reported.</p>
2.2.2	Paragraph 3.2.9	Duration of effects	<p>The Scoping Report states that impacts are considered short or long term, where short term impacts are those occurring within the construction phase and long-term impacts are permanent impacts which would occur from the operation of the Proposed Development after mitigation has been implemented. These definitions suggest that only permanent impacts are considered 'long term' and reversible impacts would be classified as 'short-term', without consideration of the duration of the impact.</p> <p>The Applicant should justify the assessment methodology used including the duration of effects. Although operational effects may be reversible following decommissioning, this would be an effect for 60 years which cannot reasonably be justified as 'short term'. It is noted that the socio-economics chapter assesses effects as short-, medium-, long- and very long-term. Where the methodology differs across aspect chapters this should be clearly described.</p>

ID	Ref	Description	Inspectorate's comments
2.2.3	Paragraph 3.2.18	Intra-cumulative effects	<p>It is noted that intra-cumulative effects will be assessed considering the residual effects post mitigation on the basis that mitigation measures are secured. The Inspectorate is content with this approach. However, the ES should also assess the potential for intra-cumulative effects that may occur as a result of proposed mitigation for a specific environmental aspect or matter e.g., a noise bund in terms of landscape and visual impact and mitigation planting on buried archaeological assets etc.</p>
2.2.4	Paragraphs 3.2.21 and 3.2.22	Inter-cumulative effects	<p>A Zone of Influence (ZOI) of 5km is quoted for considering other developments which have the potential to result in cumulative effects. The ZOI should be determined based on the potential for significant effects on receptors to occur rather than an arbitrary distance. The ZOI may differ across the environmental aspects.</p> <p>This approach should be agreed with statutory consultees. Evidence of consultation and agreement reached on methodologies implemented should be provided within the DCO application.</p>
2.2.5	Paragraph 3.4.3	Transboundary	<p>The Inspectorate on behalf of the SoS has considered the Proposed Development and concludes that the Proposed Development is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. In reaching this conclusion the Inspectorate has identified and considered the Proposed Development's likely impacts including consideration of potential pathways and the extent, magnitude, probability, duration, frequency and reversibility of the impacts.</p> <p>The Inspectorate considers that the likelihood of transboundary effects resulting from the Proposed Development is so low that it does not warrant the issue of a detailed transboundary screening. However, this position will remain under review and will have regard</p>

ID	Ref	Description	Inspectorate's comments
			<p>to any new or materially different information coming to light which may alter that decision.</p> <p>Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process.</p> <p>The Inspectorate's screening of transboundary issues is based on the relevant considerations specified in the Annex to its Advice Note Twelve, available on our website at http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/</p>
2.2.6	Paragraph 13.3.1	Legislation	<p>Section 13 of the Scoping Report refers to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. It is assumed that this is a typographical error; however, for the avoidance of doubt, all aspect chapters of the ES should comply with the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.</p>
2.2.7	N/A	Cumulative schemes	<p>The Applicant's attention is drawn to the consultation responses received from Anglian Water, Boston Borough Council, Lincolnshire County Council, Natural England, North Kesteven District Council and West Lindsey District Council (Appendix 2 of this Opinion) regarding specific developments to be included in the cumulative assessment. The Inspectorate notes that the Scoping Report does not identify specific developments for inclusion in the cumulative assessment at this stage and advises that these are agreed with relevant consultation bodies including the host LPAs.</p> <p>Anglian Water's consultation response details that the Beacon Fen Energy Park (the Proposed Development) is to be located on land which is part of the proposed site for the Lincolnshire Reservoir. The Inspectorate recommends that the ES should provide clarity on this</p>

ID	Ref	Description	Inspectorate's comments
			overlap of site boundaries, should it remain, and any implications for the Beacon Fen Energy Park.
2.2.8	N/A	Scoping Table	The Inspectorate advises the use of a table to set out the key changes in parameters/options of the Proposed Development presented in the Scoping Report to that presented in the ES. It is also advised that a table demonstrating how the matters raised in the Scoping Opinion have been addressed in the ES and/or associated documents is provided.

3. ENVIRONMENTAL ASPECT COMMENTS

3.1 Landscape and Visual

(Scoping Report Section 4)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.1.1	Paragraph 4.4.11	Aswarby Park Registered Park and Garden (RPG)	<p>The Applicant proposes to scope out effects on the Grade II listed Aswarby Park RPG based on lack of intervisibility due to a separation distance of approximately 5km from the site and the presence of intervening vegetation.</p> <p>The Screened Zone of Theoretical Visibility (ZTV) provided within Figure 4.3 of the Scoping Report shows that there is potential for visibility of the south solar array site and both solar array sites within parts of the RPG. On the basis of this potential visibility, and in the absence of further detailed information including agreement from relevant statutory consultees, the Inspectorate does not agree to scope this matter out at this stage. The ES should include an assessment of effects on this RPG, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of a likely significant effect.</p>

ID	Ref	Description	Inspectorate's comments
3.1.2	Paragraphs 4.5.1 – 4.5.3 and Figures 4.1 and 4.2	Zones of Theoretical Visibility (ZTVs)	Bareground and Screened ZTVs are provided within the Scoping Report at Figures 4.1 and 4.3 respectively. It is noted (in paragraph 4.5.2) that these ZTVs are based on maximum panel heights of 4.5m. However, there are other components of the Proposed Development which have a height greater than 4.5m, such as substation(s) of 11m height and CCTV poles of 5m.

ID	Ref	Description	Inspectorate's comments
			<p>Paragraph 4.6.5 also states that it is assumed that the cable would be buried; however, it is noted in paragraph 2.5.4 that the option of using overhead line(s) instead of a buried cable cannot be ruled out.</p> <p>The final ZTVs, and subsequently the Landscape and Visual Impact Assessment (LVIA), should ensure that a worst-case scenario is assessed based on the maximum parameters of the Proposed Development, including any auxiliary infrastructure such as security camera poles, fences, or construction compounds (although the Inspectorate notes the Applicant's intention to assess a worst-case scenario, as stated in paragraph 2.9.2 of the Scoping Report). The Applicant should consider the use of multiple ZTVs if appropriate.</p>
3.1.3	Paragraph 4.5.14 and 4.5.15	Photomontages	<p>The Scoping Report states that it is currently anticipated that photomontages will be provided for four of the sixteen viewpoints (specifically Viewpoints 5, 6, 9, and 10). Limited justification is provided for the selection of these photomontages; paragraph 4.5.15 of the Scoping Report states that these photomontages will show the Proposed Development "<i>in its landscape context from key locations in the surrounding locality</i>".</p> <p>The Applicant should fully justify the location and number of photomontages, ensuring these are fully representative of the maximum visual envelope of the Proposed Development. The Applicant should seek agreement from relevant consultees regarding the appropriateness of selected photomontages and evidence of this agreement should be provided within the DCO application.</p> <p>The photomontages should show all components of the Proposed Development, including security fencing, CCTV poles, battery storage system, substations etc., and demonstrate the Proposed Development before and after mitigation in order to enable a worst-case scenario to be fully understood.</p>

ID	Ref	Description	Inspectorate's comments
3.1.4	Table 4.2, Figures 4.1 and 4.3.	Viewpoints	<p>The Scoping Report does not provide any evidence that viewpoints selected at this stage have been agreed by the LPAs and other relevant stakeholders, although it is noted in paragraph 4.5.13 that viewpoints are subject to change following stakeholder comments. The Applicant should seek agreement from relevant consultees regarding the appropriateness of selected viewpoints and provide evidence of this agreement within the DCO application.</p> <p>Furthermore, the numbering of the viewpoints shown in Figures 4.1 and 4.3 is different across the two figures. Figure 4.3 includes a Viewpoint 0, but no such viewpoint is listed within Table 4.2. The Applicant should ensure consistency of labels between figures and/or across documents to ensure references are made to the correct viewpoints.</p>
3.1.5	Paragraph 4.6.6 and Appendix 14.1	Landscape Environmental Management Plan / Landscape and Ecological Management Plan (LEMP)	<p>Embedded mitigation measures, namely retention and management of new and existing planting, are proposed to be detailed within an "accompanying Landscape Environmental management Plan (LEMP)". Appendix 14.1 (Healthy Planning Checklist) also states that a "Landscape and Ecological Management Plan (LEMP) will form part of the DCO submission". Assuming these refer to the same document, the Inspectorate would expect to see an outline LEMP submitted as part of the DCO application, detailing the specific mitigation measures proposed and the means by which these would be secured. The LEMP should also detail monitoring requirements and consider the potential for vegetation planting as a form of mitigation to be affected by climate change.</p> <p>To allow for documents to be certified within the DCO, as a mechanism to secure the mitigation, the application documents should ensure that the naming convention is consistent between the documents and the appropriate Schedule of the DCO.</p>

3.2 Ecology

(Scoping Report Section 5)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.2.1	N/A	N/A	No matters have been proposed to be scoped out of the assessment.

ID	Ref	Description	Inspectorate's comments
3.2.2	Table 5.1	Study area	<p>The Scoping Report proposes a 20km study area for internationally designated sites. The ES should ensure the study area reflects the project's ZOI rather than being based on a fixed distance. The ES should consider the potential for effects to occur beyond 20km, particularly where designated sites are designated for mobile species such as birds and bats.</p> <p>Effort should be made to agree the study area(s) with relevant consultation bodies.</p>
3.2.3	Table 5.4	Scope	<p>Table 5.4 in the Scoping Report states that at this stage no matters are proposed to be scoped out of the assessment. It is also stated that ecological surveys and the refinement of the Cable Route Corridor will be used to scope out impacts "during the EIA".</p> <p>The Applicant's attention is drawn to paragraph 1.04 of this Opinion which states that matters may be subsequently scoped out if further evidence has been provided to justify this approach. It is advised that any subsequent refinement of scope should be agreed with relevant consultation bodies in writing, with evidence and a clear justification submitted as part of the ES. See ID 2.2.8 above which recommends the use of a table to explain how matters raised in the Scoping Opinion have been addressed in the ES.</p>

ID	Ref	Description	Inspectorate's comments
3.2.4	Paragraphs 5.7.5 and 5.7.6	Methodology	<p>The assessment methodology outlined within these paragraphs of the Scoping Report is unclear. Paragraph 5.7.5 states that unless species are subject to legal protection or control, all ecological features which are considered "<i>important at negligible level</i>" would be scoped out of assessment. It is also stated that ecological features of local importance "<i>where there was a specific technical justification</i>" will be scoped out. The Scoping Report states that significant effects would not be possible for these features, in line with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance (2018). Paragraph 5.7.6 of the Scoping Report states that "<i>protected species and ecological features that are of sufficient importance were then taken through to the next stage of the scoping assessment</i>".</p> <p>It is unclear whether this approach describes the scoping process which has occurred to date or whether this is the proposed approach to be undertaken within the ES. For the avoidance of doubt, the Inspectorate is of the opinion that sufficient justification, supported by evidence and agreement from statutory consultees, is required to scope out specific features from the assessment within the ES, particularly as the CIEEM (2018) guidance notes that significant effects can occur at a wider range of scales.</p>
3.2.5	N/A	Designated sites	<p>The ES should consider the potential for the Proposed Development site to provide functionally linked land for bird species associated with the Wash SPA and Ramsar sites.</p>
3.2.6	N/A	Confidential Annexes	<p>Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other</p>

ID	Ref	Description	Inspectorate's comments
			assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.

3.3 Cultural Heritage

(Scoping Report Section 6)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.3.1	Table 6.2	Direct physical effects on built heritage assets beyond the site boundary	The Applicant proposes to scope out direct physical effects on heritage assets beyond the site boundary on the basis that the Proposed Development would not have a direct effect on heritage assets during the construction, operation, or decommissioning phases. Considering the nature of the Proposed Development, the Inspectorate agrees that this matter can be scoped out.
3.3.2	Paragraph 6.6.6 and Table 6.2	Direct physical effects on archaeological assets during operation and decommissioning	<p>The Applicant proposes to scope out direct physical effects on archaeological assets during operation and decommissioning as the Applicant considers that physical effects will occur during the construction phase only.</p> <p>In the absence of further information relating to the potential for archaeological remains to be present on site, the Inspectorate considers that physical impacts to non-designated assets during operation and decommissioning could give rise to significant effects and should be scoped into the assessment. This should also consider point ID 2.1.5 above relating to the potential for components of the</p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			Proposed Development to require replacement to enable a 60-year lifespan to be delivered.
3.3.3	Paragraph 6.6.11 and Table 6.2	Historic Landscape (decommissioning)	<p>The Applicant proposes to scope out impacts to the historic landscape during decommissioning on the basis that the landscape would be restored to its original use with no impact to the historic landscape.</p> <p>Given there is potential for temporary impacts to the historic landscape during decommissioning as identified in paragraph 6.6.11 of the Scoping Report and effects are likely to be similar to those experienced during construction, the Inspectorate is of the opinion that this matter cannot be scoped out at this stage.</p>

ID	Ref	Description	Inspectorate's comments
3.3.4	Paragraphs 6.2.1 and 6.2.2	Study area	The Scoping Report proposes a 2km study area for non-designated assets. For the assessment of setting, the study area should be agreed with the relevant stakeholders and informed by the visual analysis in the form of understanding the ZTV.
3.3.5	Table 6.3 and Table 6.4	Criteria	The Scoping Report does not explain where the criteria set out in Tables 6.3 and 6.4 have been derived from. Any guidance used in the ES assessments should be appropriately referenced within each aspect chapter.
3.3.6	Paragraphs 6.7.5 and 6.7.7	Baseline	<p>The Scoping Report states that a geophysical survey is proposed to be undertaken from April 2023 and this, along with discussions with Lincolnshire County Council's Archaeologist, will determine the need for any further archaeological investigation and necessary mitigation.</p> <p>The Inspectorate notes the responses from Lincolnshire County Council and the Heritage Trust of Lincolnshire (who act on behalf of</p>

ID	Ref	Description	Inspectorate's comments
			North Kesteven District Council) indicating the need for a full suite of comprehensive desk-based research, non-intrusive surveys, and intrusive field evaluation to understand the full extent of any potential impact and inform an appropriate programme of archaeological mitigation. The Inspectorate advises that where necessary, any intrusive investigations and trial trenching should be completed prior to submission of the DCO application. The Applicant should make effort to discuss and agree the timing, scope and methodology for any intrusive investigations and trial trenching with relevant consultation bodies.
3.3.7	N/A	Data sources	The Applicant is advised to consider North Kesteven District Council's local list of non-designated heritage assets.
3.3.8	Table 6.3 and Table 6.4	Criteria	Historic England has raised concern (Appendix 2 of this Opinion) with the proposed approach to the criteria for assessing the value of heritage assets and impact magnitude contained in Table 6.3 and 6.4 of the Scoping Report respectively. The Applicant should make effort to agree the approach with Historic England and other relevant consultation bodies. If the Applicant's approach to recording significance of an asset deviates from the advice it has received, the ES should explain why and provide justification based on relevant evidence and professional opinion.

3.4 Access and Traffic

(Scoping Report Section 7)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.4.1	Table 7.3	Public Right of Way (PRoW) users during all phases	Table 7.3 of the Scoping Report states that the matter of PRoW users will be assessed in the socio-economic assessment. The Inspectorate notes that the Socio-economic chapter at Table 13.1 identifies the potential effects of access to PRoWs is to be assessed at all phases of the Proposed Development within the socio-economics assessment. On this basis, the Inspectorate is content with this approach providing sufficient cross-referencing is provided. The Applicant is referred to ID 3.10.5 below regarding the assessment of impacts to users of PRoW.
3.4.2	Table 7.3 and Paragraph 7.6.2	Operational transport effects	The Scoping Report states that the effect of operational traffic is likely to result in one vehicle per week moving to and from the site. Noting this, the Inspectorate agrees that operational traffic movements may be scoped out from further assessment. The Inspectorate however notes the potential for the replacement of panels and other components within the lifetime of the Proposed Development and the potential for this to give rise to likely significant effects. The Inspectorate draws the Applicant's attention to ID 2.1.5 in relation to repowering/replacement of components.
3.4.3	Table 7.3 and Paragraph 7.6.3	Decommissioning phase transport effects	The Scoping Report considers that effects during the decommissioning phase will be the same or less than those during the construction phase and proposes to scope out this matter due to uncertainties in relation to future traffic flows. The Scoping Report proposes that a Decommissioning Statement will be submitted as part of the DCO application and prior to decommissioning commencing, an Outline Decommissioning Environmental Management Plan (oDEMP) will be prepared and agreed with the relevant LPA. The Inspectorate

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			is content with this approach and agrees that this matter can be scoped out.

ID	Ref	Description	Inspectorate's comments
3.4.4	Paragraphs 7.2.1 and 7.2.2	Study area	A study area is shown in Figure 7.1 of the Scoping Report, which has been based on professional judgement. The ES should justify how the study area has been identified for assessment with reference to relevant industry guidance, sensitive receptors and agreement with the relevant highway authorities. A plan illustrating the extent of the study area, the expected route(s) of construction traffic, and anticipated numbers of vehicle movements (including vehicle type, peak hour and daily movements) should be included in the ES.

3.5 Noise and Vibration

(Scoping Report Section 8)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.5.1	Paragraph 8.4.3 and Table 8.2	Baseline survey near Cable Route Area	<p>The Scoping Report states that noise and vibration from the cable route would only occur during construction and would be temporary in nature, and that as the cable route is not precisely known, no baseline survey has been assumed for potential receptors surrounding the Cable Route Area, and only short measurements may be undertaken to cover this topic. It is further stated that this will be reviewed as the design of the actual cable route is refined.</p> <p>The Inspectorate considers that the ES should provide representative data to characterise the baseline environment and should demonstrate that construction activities associated with the cable route will not give rise to likely significant effects. The baseline information should be agreed with relevant statutory consultees.</p>

ID	Ref	Description	Inspectorate's comments
3.5.2	Paragraph 2.4.9	Worst Case Scenario – Inverters	<p>The Scoping Report states that central inverters will be assumed for the purposes of assessing a worst-case scenario. The justification provided is that this is "<i>the larger option</i>".</p> <p>Based on the location of noise sensitive receptors close to the boundaries of the panel array areas (as shown on Figures 8.1 and 8.2 of the Scoping Report) the Inspectorate considers that there is potential for string inverters to have a greater impact on the sensitive receptors due to proximity.</p>

ID	Ref	Description	Inspectorate's comments
			The ES should therefore ensure that the justified worst-case scenario is assessed within the ES. See ID 2.1.3 above.
3.5.3	Paragraphs 8.2.1 and 8.2.2	Study area and sensitive receptors	A 300m study area is proposed for identifying sensitive receptors. The ES should explain how the study area and sensitive receptors have been selected with reference to the extent of the likely impacts and relevant supporting evidence such as modelling. The Scoping Report states that the existing sensitive receptors comprise residential, leisure and community receptors. The ES should also consider if there are any ecological receptors that require consideration in respect of noise and vibration related impacts. The Applicant should seek agreement on any ecological receptors from relevant consultation bodies and cross-reference to the relevant chapters within the ES where relevant.
3.5.4	Paragraph 8.7.1	Baseline monitoring	The Scoping Report states that a minimum of eight monitoring locations will be surveyed. Figures 8.1 and 8.2 of the Scoping Report show the suggested noise monitoring locations. The ES should explain how the baseline monitoring locations were chosen and how they are deemed to be representative of nearby receptors. The monitoring locations should be agreed with relevant statutory consultees.
3.5.5	N/A	Road traffic noise	The Scoping Report does not refer to road traffic noise as being considered within the assessment. The ES should consider whether this alone could result in likely significant effects or do so cumulatively with other noise emissions from the Proposed Development. The ES should provide information on trip generation, traffic routing, noise emissions and distances from receptors including any measures that are to be secured to avoid or reduce likely significant effects for all phases.

ID	Ref	Description	Inspectorate's comments
3.5.6	Paragraph 8.7.7	Night-time assessment	<p>Paragraph 8.7.7 sets out the assessment scenarios for the operational phase. The Inspectorate notes that the scenarios include the night-time assessment of all energy storage and solar components in operation during the early morning hours (05:00 – 07:00) from March to September, and night-time (23:00 – 07:00 hours) assessment of energy storage components in operation year-round. The Inspectorate considers that the ES should provide a full justification for the proposed night-time assessment scenarios, and this should be agreed with the relevant statutory consultees.</p>

3.6 Water Resources

(Scoping Report Section 9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.6.1	Paragraph 9.6.4, Table 9.1 and Table 9.2	Water Framework Directive (WFD) Assessment	<p>Scoping Report Table 9.2 proposes to scope out a WFD assessment on the basis that adverse effects from the Proposed Development would be avoided through implementation of standard and best practice mitigation measures during operation, and appropriate mitigation measures secured via the Construction Environmental Management Plan (CEMP) (or equivalent) during construction and decommissioning. Therefore, the Proposed Development is not likely to interfere with the waterbodies' objectives or the ability to maintain or achieve good WFD status.</p> <p>Table 9.1 identifies the potential for likely significant effects from the Proposed Development on surface water and groundwater receptors through changes to water quality/quantity. Paragraph 9.6.1 refers to watercourse crossings, but these are not described in the project description, and it is unknown whether potential crossings are for vehicles, cable routing etc. Given the potential for likely significant effects, and in the absence of further detail regarding what type of crossings are proposed and the location of these or potential impacts on WFD waterbodies, the Inspectorate cannot agree to scope this matter out. The ES should provide a WFD assessment (or a screening assessment detailing why a full assessment is not required) to inform the ES assessment. The approach and findings should be agreed with the relevant statutory consultees.</p>

ID	Ref	Description	Inspectorate's comments
3.6.2	Paragraph 9.2.1	Study area	The Scoping Report proposes a 2km study area from the site boundary. The ES should provide a figure clearly displaying the study area and should clearly explain and justify the study area used in the assessment.
3.6.3	Paragraph 9.8.3	Flood Risk Assessment (FRA)	The Inspectorate notes the Applicant's intention to include an FRA as a standalone report to be included within the Technical Appendices of the ES. The FRA should be based on the requirements of the Environment Agency standing advice. This should include a description of how the Proposed Development satisfies the requirements of the sequential and exception tests, where relevant. The FRA should demonstrate that the Proposed Development includes suitable mitigation measures and flood resilient construction that will allow the development to remain operational for its 60-year lifespan. This includes confirming that all the flood sensitive equipment associated with the Proposed Development remains operational during a 0.1% event. Furthermore, the FRA should consider the surface water drainage/flood risk impacts that may occur off site and the potential of increased flood risk beyond the site boundary. This should include consideration of the potential for the solar installation to increase the rate of runoff from the site. The Applicant's attention is drawn to the comments from the Environment Agency (Appendix 2 of this Opinion) regarding the FRA.
3.6.4	Paragraph 9.9.1	Mitigation measures	Scoping Report paragraph 9.9.1 suggests that a Sustainable Drainage System (SuDS) with applicable climate change allowances will be incorporated in the design of the Proposed Development as a mitigation measure but provides no details regarding their design or location at this stage. Scoping Report paragraph 9.9.1 suggests that a Sustainable Drainage System (SuDS) with applicable climate change allowances will be incorporated in the design of the Proposed Development as a form of mitigation but provides no details

ID	Ref	Description	Inspectorate's comments
			regarding their design or location at this stage. The design of such mitigation measures should be informed by relevant and up to date climate change allowances for the project's lifespan.
3.6.5	N/A	Artesian conditions	The Environment Agency in their consultation response (Appendix 2 of this Opinion) has identified known artesian conditions in the vicinity of the site. The Applicant is advised to take this into account when determining baseline conditions and to provide an assessment of effects where such conditions are determined to be present or have the potential to be affected by the works.

3.7 Climate Change

(Scoping Report Section 10)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.7.1	N/A	N/A	No matters have been proposed to be scoped out of the assessment.

ID	Ref	Description	Inspectorate's comments
3.7.2	Paragraph 10.7.3	Net emissions	The assessment proposes to use net/ relative greenhouse gas emissions which assesses the difference between absolute emissions and the baseline emissions for a " <i>typical development of a similar type</i> ". The ES should clearly set out its approach to defining significance of effect and contextualising the Proposed Development emissions, with reference to the relevant guidance. The calculation of GHG emissions should take account of emissions across the full project lifecycle including, where relevant, any emissions arising through land use change, and direct and indirect emissions associated with the construction phase.

3.8 Glint

(Scoping Report Section 11)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.8.1	Paragraph 11.5.2 and Table 11.2	Construction / decommissioning phase effects	<p>The Applicant proposes to scope out effects during the construction and decommissioning phases on the basis that works would be temporary and are not able to be modelled using software. It is also noted that construction and decommissioning phases activities will be conducted in line with guidance provided in a CEMP.</p> <p>Difficulty of assessment is not an adequate justification to scope matters out. However, having noted this, provided that sufficient information be provided in the application and CEMP in relation to locations of construction compounds and working practices to minimise any effects of glint, the Inspectorate agrees to scope this matter out.</p>

ID	Ref	Description	Inspectorate's comments
3.8.2	Table 11.1 and Table 11.2	Summary of likely significant effects	Table 11.1 indicates that potential effects during the construction phase and decommissioning phase are to be scoped into the assessment, albeit without quantitative assessment. However, Table 11.2 states that an assessment of construction and decommissioning effects is proposed to be scoped out. Therefore, there is inconsistency between the two Tables. The Applicant's attention is drawn to ID 3.8.1.
3.8.3	Paragraphs 11.5.3,	Study area	Paragraph 11.5.3 of the Scoping Report states that receptors sensitive to glint will be identified using modelling. Paragraph 11.5.6 goes on to state that a preliminary assessment has identified potentially susceptible "fixed point receptors" (namely residential,

ID	Ref	Description	Inspectorate's comments
	11.5.6, and 11.5.10		<p>commercial, and industrial receptors) within 5km of the Proposed Development. It is therefore unclear whether the assessment of glint effects on fixed point receptors will only consider a 5km study area.</p> <p>For the avoidance of doubt, the Inspectorate is of the opinion that receptors should be identified based on the potential for likely significant effects to occur rather than an arbitrary fixed distance from the site and therefore the Applicant should consider the potential for glint and glare effects to occur beyond 5km. The Inspectorate notes the Applicant's intention to use the ZTV to determine identify visibility of the site, as stated in paragraph 11.5.10 of the Scoping Report. However, as noted in ID 3.1.2 above, the ZTVs provided within the Scoping Report may not be representative of the worst-case scenario. The final ZTVs should be based on the maximum extent of the Proposed Development. Effort should be made to agree the sensitive receptors with relevant consultation bodies.</p>

3.9 Soils and Agricultural Land

(Scoping Report Section 12)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.9.1	Table 12.3	Agricultural land drainage	<p>The Applicant proposes to scope out agricultural land drainage on the basis that it will not directly impact the assessment of soils and agricultural land but instead will impact on "<i>the potential economic and hydrological effects of the land management</i>". This statement is unclear. No further justification is provided for scoping this matter out. Based on this limited information, and the comments from the Environment Agency in relation to known artesian conditions in the area, the Inspectorate does not agree to scope this matter out.</p> <p>The ES should provide an assessment of agricultural land drainage where there is potential for likely significant effects to occur on soils and agricultural land or demonstrate that no likely significant effects would occur with agreement from relevant statutory consultees. Where there are inter-related effects, these should be appropriately cross-referenced within the ES.</p>
3.9.2	Table 12.3	Land Holdings	<p>The Applicant proposes to scope out an assessment of the potential impact on land holdings and farm business/viability from the Soils and Agricultural Land aspect chapter. It is stated that this assessment would instead be provided within the socioeconomics chapter of the ES. The Inspectorate is content that this matter can be assessed within the socioeconomics aspect chapter but suggests that appropriate cross-referencing between aspects is included to ensure a comprehensive assessment has been undertaken.</p>

ID	Ref	Description	Inspectorate's comments
3.9.3	Paragraph 12.6.1	Agricultural Land Classification (ALC) survey	The Scoping Report states that ALC surveys were undertaken at a 'reconnaissance scale' of 1 point per 5ha. The Applicant should ensure that a sufficient number of auger locations are used across the site to accurately inform the assessment in line with relevant guidance and/or standards (e.g., Natural England Technical Information Note TIN049, 2012), or justify why this surveying methodology approach is robust, seeking agreement from relevant statutory bodies.
3.9.4	Paragraphs 12.6.1 – 12.6.3	Baseline	<p>Paragraph 12.6.1 states that ALC surveys were conducted at "Beacon Fen North" and "Beacon Fen South" and paragraph 12.6.3 refers to ALC surveys of "<i>the two solar array sites</i>" however the technical appendices provided (Appendices 13.1 and 13.2 of the Scoping Report), and referenced within paragraph 12.3.1, refer to "Bicker Fen North" and "Bicker Fen South". It is therefore unclear whether the ALC surveys have been conducted for the solar array sites or whether the baseline described utilises data from nearby sites located near Bicker Fen. The Applicant should clarify whether ALC surveys have been conducted for the PV array sites, being careful to ensure that naming convention for the sites is consistent throughout to avoid confusion.</p> <p>It is also noted (in paragraph 12.6.2) that ALC surveys have not yet been conducted for the Cable Route Area. However, it is not clear whether surveys of Cable Route Corridor will be conducted to inform the baseline. If ALC surveys are not proposed to be conducted for the Cable Route Corridor the ES should clearly justify this with reference to guidance.</p>
3.9.5	Paragraphs 12.3.6 and 12.7.1	Mitigation	The Scoping Report states that a site-specific Soil Management Plan (SMP) will be prepared and that with the implementation of this, significant effects on soil resources would not occur. The Inspectorate

ID	Ref	Description	Inspectorate's comments
			<p>would expect to see an outline version of the SMP provided alongside the application documents.</p> <p>Paragraph 12.3.6 of the Scoping Report states that ALC indicates that 22.7% of the Solar Array Sites is classified as Best and Most Versatile (BMV) agricultural land.</p> <p>In addition to soil management measures, the ES should explain how the design has taken into account BMV land in order to avoid, prevent, or reduce any potential likely significant effects on BMV land or explain why this is not feasible.</p> <p>The ES should cross-refer conclusions in the aspect chapter to specific mitigation measures within the outline SMP which are relied upon for the conclusion of no likely significant effects.</p>

3.10 Socioeconomics

(Scoping Report Section 13)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
3.10.1	Table 13.2	Negative side effects of local economic growth	<p>The Applicant proposes to scope out negative side effects of local economic growth (specifically price inflation and economic dependence on the Proposed Development) on the basis that these are unlikely due to the scale and type of the Proposed Development.</p> <p>The Inspectorate has considered the characteristics of the Proposed Development and is content that significant side effects on price inflation and economic dependence on the Proposed Development are unlikely to result in likely significant effects and therefore this matter can be scoped out.</p>
3.10.2	Table 13.2	Pressure on local services and infrastructure from population immigration	<p>The Applicant proposes to scope out the effects of population immigration from the Proposed Development on local services and infrastructure. The reasoning provided is that a large part of the workforce would likely come from the Direct and Indirect Areas of Influence (AOIs).</p> <p>As noted in paragraph 13.5.2 of the Scoping Report, no details are available at this stage concerning the number of direct and indirect jobs expected. As such it is not clear on what basis the assumption that the majority of the workforce would come from the Direct and Indirect AOIs has been made. Therefore, on the basis of the information provided, the Inspectorate cannot agree to scope this matter out at this stage.</p>
3.10.3	Table 13.2	Physical displacement	<p>The Scoping Report states that the Proposed Development is unlikely to result in the physical displacement of households or farms in the Proposed Development area as <i>"the land is mostly agricultural, and</i></p>

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
			<p><i>the final design of the cable routes and solar farms should omit any construction".</i> This wording is unclear. The Inspectorate assumes that the Applicant is implying that the Proposed Development area is in an area of very low population density and construction activities would not directly impact on households or farm buildings through their displacement.</p> <p>Figure 13.1 in the Scoping Report shows the location of communities and farms in relation to the Proposed Development site boundaries. This figure shows that there are communities and farms located within and near the site boundary (namely Howell on the edge of the Northern solar array site, Boughton and Little Hale Fen Farm located within the Cable Route Search Area and Thorpe Latimer farm on the edge of the Southern Solar array site). Although the Cable Route Corridor is not yet refined at this stage, based on the information provided, it is unclear whether physical displacement of these receptors could occur. Therefore, the Inspectorate cannot agree to scope this matter out at this stage.</p>

ID	Ref	Description	Inspectorate's comments
3.10.4	Paragraph 13.5.2	Mitigation	<p>The Scoping Report states that mitigation measure requirements will not be covered within the socioeconomic assessment and instead will be covered within other environmental aspects of the ES. Where such measures avoid what would otherwise be significant socioeconomic effects, these measures, as well as the mechanism by which they are secured by the DCO, should be adequately described within the socioeconomics chapter and cross-referencing provided to enable intra-project effects to be understood.</p>

ID	Ref	Description	Inspectorate's comments
3.10.5	Paragraph 13.4.5 and Table 13.1	Impacts to users of PRow	The Proposed Development site will affect a number of PRow but no surveys are proposed to understand the baseline use of these PRow. It is therefore unclear of the usage of these routes. The ES should assess impacts to PRow from the Proposed Development where significant effects are likely to occur and clearly signpost where this has been assessed in the ES. The Applicant's attention is drawn to ID 3.4.1.

3.11 Aspects to be Scoped Out

(Scoping Report Section 14)

ID	Ref	Applicant's proposed aspects to scope out	Inspectorate's comments
3.11.1	Paragraph 14.1.8	Air Quality – operational effects	<p>The Inspectorate agrees that likely significant effects relating to air quality during operation of the Proposed Development are unlikely due to the scale and nature of the development and the number of vehicle trips as discussed at Paragraph 7.6.2 of the Scoping Report.</p> <p>The Inspectorate, however, notes the potential for the replacement of panels and other components within the lifetime of the Proposed Development and the potential for this to give rise to likely significant effects. The Inspectorate draws the Applicant's attention to ID 2.1.5 in relation to repowering/replacement of components.</p> <p>Noting the potential for likely significant effects, the Inspectorate does not agree to scope this matter out.</p>
3.11.2	Paragraph 14.1.9	Air Quality – Dust Assessment	<p>The ES should be clear on the guidance being used to inform the dust assessments; the methodology, results, and mitigation required.</p> <p>The Inspectorate notes the approach and whilst securing mitigation through the CEMP is unlikely to result in significant effects, no screening assessment has yet been undertaken and no information on the mitigation has been included at this stage. The ability to agree to scope this issue out is dependent on the outcome of the screening assessment and the outline CEMP and at this stage the Inspectorate is unable to agree to scope this matter out.</p> <p>The Scoping Report does not provide sufficient information to understand the likely activities that are being discussed (e.g., dust arisings from vehicle movements and ground works) to enable a view to be taken as to whether this is a matter that can be scoped out at</p>

ID	Ref	Applicant's proposed aspects to scope out	Inspectorate's comments
			this stage. The ES should clearly set out expected activities during construction and decommissioning and whether these are likely to give rise to significant effects, securing mitigation if required.
3.11.3	Paragraph 14.1.10	Air Quality – Dust soiling impacts on designated sites	The Inspectorate notes the conclusion in paragraph 14.1.10 that there are no designated sites within 50m of the site boundary or track out routes and therefore agrees that dust soiling impacts on designated sites can be scoped out from assessment in line with guidance from the Institute of Air Quality Management (IAQM).
3.11.4	Paragraph 14.1.11	Air Quality – Plant emissions during construction and decommissioning	<p>The Scoping Report does not provide sufficient information on the type, number, and location of plant and machinery within the Proposed Development site. As such, the Inspectorate does not agree that plant emissions can be scoped out as set out in paragraph 14.1.11 of the Scoping Report.</p> <p>An assessment of effects should be provided unless robust justification is provided to demonstrate that such plant and machinery would not give rise to significant air quality effects.</p>
3.11.5	Paragraph 14.1.12	Air Quality – Traffic emissions during operation	The Inspectorate notes that the Scoping Report states that traffic movements during operation are to be 'well below' the criteria for assessment as set out in the EPUK/IAQM Guidance and therefore should be scoped out the assessment. The Inspectorate, considering the nature and scope of the Proposed Development, agrees to this approach subject to confirmation in the ES that the proposed construction and operation vehicle numbers alone or cumulatively with other proposals on relevant links will not exceed the relevant EPUK/IAQM thresholds.

ID	Ref	Description	Inspectorate's comments
3.11.6	Paragraph 14.1.7	Air Quality Assessment	The Scoping Report notes at Paragraph 14.1.7 that a residential buffer will be implemented as part of the assessment for the potential for likely significant effects. The ES should clearly state and justify the distance of this buffer.

ID	Ref	Applicant's proposed aspects to scope out	Inspectorate's comments
3.11.7	Section 14.2	Ground Conditions	The Inspectorate agrees, based on the information provided, that significant effects on ground conditions during construction and operation are unlikely, however is unable to conclude to this aspect being scoped out prior to the results of the Phase 1 Ground Conditions and contamination Desk Study Report being known. The ES should, therefore, provide these results as justification of the approach being taken and if identified, the ES should assess significant effects on ground conditions where they are likely to occur.
3.11.8	Section 14.3	Human Health	The Inspectorate agrees, considering the information provided in the Scoping Report and Appendix 14.1, that this aspect can be scoped out of the ES provided adequate signposting between aspect chapters is included.
3.11.9	Section 14.4	Waste	The Inspectorate notes the intention to produce a Site Waste Management Plan (SWMP) secured through the CEMP. It is noted at paragraph 14.4.8 that large scale earthworks are not anticipated, and construction waste streams are proposed to be addressed offsite and minimised. Materials are proposed to be reused on site and, where possible, 'take back' agreements put in place with suppliers. Decommissioning is anticipated to be 60 years into the future and

ID	Ref	Applicant's proposed aspects to scope out	Inspectorate's comments
			<p>addressed through an oDEMP. The Scoping Report suggests that with these measures in place, significant effects are unlikely.</p> <p>It is recognised that solar developments are typically considered to be c. 40-year developments with panel degradation cited as a limiting factor on project lifespan. On that basis, the Inspectorate considers that it is likely that all panels would have to be replaced at least once during the operational life of the project. This means that there is a potential need for substantial removal of panel waste prior to the end of the stated operational period that should be addressed within the ES and/ or oDEMP. The ES should include an assessment of the likely impact of component replacement (e.g., batteries and panels) and outline what measures, if any, are (or will be put) in place to ensure that these components are able to be diverted from the waste chain. The ES should assess the likely significant effects from waste at decommissioning to the extent possible at this time. The ES should include estimates, by type and quantity, of expected residues and emissions and quantities and types of waste produced during the construction and operation phases in line with Schedule 4 of the EIA Regulations.</p>
3.11.10	Section 14.5	Accidents and Disasters	<p>The Inspectorate is content that measures set out in the Scoping Report to be included in the project design will ensure that the Proposed Development will not result in likely significant effects as a result of an accident or man-made or natural disaster. As such, providing potential risks are assessed in the ES in relevant related chapters and any relevant mitigation is secured through relevant management plans, the Inspectorate is content to scope this matter out.</p>
3.11.11	Section 14.6	Electric, Magnetic and Electromagnetic Fields	<p>The Applicant proposes to scope this aspect out on the basis that design measures will be incorporated within the Proposed</p>

ID	Ref	Applicant's proposed aspects to scope out	Inspectorate's comments
			<p>Development to avoid the potential for EMF effects on receptors and these will be set out and explained within the ES. However, paragraph 2.5.4 of the Scoping Report identifies that where environmental constraints prevent the use of underground cabling, sections of above ground / overhead lines (potentially up to 400kV) may be required.</p> <p>Given the uncertainty surrounding cabling design and proximity to receptors, the ES should address the risks to human health arising from EMF to the extent that it is relevant to the nature of the development, taking into account relevant technical guidance, and where significant effects are likely to occur. The Inspectorate considers that the ES should set out the design measures to be implemented to avoid the potential for likely significant effects in line with DECC's Voluntary Code of Practice 2012.</p>
3.11.12	Section 14.7	Telecommunications, Television Reception and Utilities	The Inspectorate is content to scope this matter out provided that the ES sets out the findings of the desk-based assessment and how this has been taken into account in the design to mitigate impacts.
3.11.13	Section 14.8	Wind Microclimate	Having considered the nature and characteristics of the Proposed Development the Inspectorate is content that significant effects are unlikely and therefore this matter can be scoped out of the ES.
3.11.14	Section 14.9	Daylight, Sunlight and Overshadowing	The Inspectorate has considered the characteristics of the Proposed Development and is content that the scale and massing of the Proposed Development will not cause changes to daylight or sunlight visibility, or cause overshadowing, and this aspect can be scoped out.

APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

TABLE A1: PRESCRIBED CONSULTATION BODIES¹

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Integrated Care Board	NHS Lincolnshire Integrated Care Board
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England
The relevant fire and rescue authority	Lincolnshire Fire and Rescue Service
The relevant police and crime commissioner	Lincolnshire Police and Crime Commissioner
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Donington Parish Council
	Bicker Parish Council
	Swineshead Parish Council
	Swaton Parish Council
	Kirkby La Thorpe Parish Council
	Ewerby and Evedon Parish Council
	Little Hale Parish Council
	Great Hale Parish Council
	Heckington Parish Council
	Scredington Parish Council
Helpringham Parish Council	

¹ Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations')

SCHEDULE 1 DESCRIPTION	ORGANISATION
	Asgarby and Howell Parish Council
	South Kyme Parish Council
The Environment Agency	Environment Agency
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Lincolnshire County Council
The relevant strategic highways company	National Highways
The relevant internal drainage board	Black Sluice Internal Drainage Board
	Witham First Internal Drainage Board
The Canal and River Trust	Canal and River Trust
United Kingdom Health Security Agency, an executive agency of the Department of Health and Social Care	United Kingdom Health Security Agency
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission	Forestry Commission (East and East Midlands)
The Secretary of State for Defence	Ministry of Defence

TABLE A2: RELEVANT STATUTORY UNDERTAKERS²

STATUTORY UNDERTAKER	ORGANISATION
The relevant Integrated Care Board	NHS Lincolnshire Integrated Care Board
The National Health Service Commissioning Board	NHS England
The relevant NHS Trust	East Midlands Ambulance Service NHS Trust
Railways	Network Rail Infrastructure Ltd
	National Highways Historical Railways Estate

² 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (PA2008)

STATUTORY UNDERTAKER	ORGANISATION
Civil Aviation Authority	Civil Aviation Authority
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS En-Route Safeguarding
Universal Service Provider	Royal Mail Group
Homes and Communities Agency	Homes England
The relevant Environment Agency	Environment Agency
The relevant water and sewage undertaker	Anglian Water
	Severn Trent
The relevant public gas transporter	Cadent Gas Limited
	Northern Gas Networks Limited
	Scotland Gas Networks Plc
	Southern Gas Networks Plc
	Wales and West Utilities Ltd
	Energy Assets Pipelines Limited
	ES Pipelines Ltd
	ESP Connections Ltd
	ESP Networks Ltd
	ESP Pipelines Ltd
	Fulcrum Pipelines Limited
	GTC Pipelines Limited
	Harlaxton Gas Networks Limited
	Independent Pipelines Limited
	Indigo Pipelines Limited
Last Mile Gas Ltd	
Leep Gas Networks Limited	

STATUTORY UNDERTAKER	ORGANISATION
	Mua Gas Limited
	Quadrant Pipelines Limited
	Squire Energy Limited
	National Grid Gas Plc
The relevant electricity distributor with CPO Powers	Eclipse Power Network Limited
	Energy Assets Networks Limited
	ESP Electricity Limited
	Fulcrum Electricity Assets Limited
	Harlaxton Energy Networks Limited
	Independent Power Networks Limited
	Indigo Power Limited
	Last Mile Electricity Ltd
	Leep Electricity Networks Limited
	Mua Electricity Limited
	Optimal Power Networks Limited
	The Electricity Network Company Limited
	UK Power Distribution Limited
	Utility Assets Limited
	Vattenfall Networks Limited
	National Grid Electricity Distribution Midlands Limited
National Grid Electricity Transmission Plc	
National Grid Electricity System Operator Limited	

TABLE A3: SECTION 43 LOCAL AUTHORITIES (FOR THE PURPOSES OF SECTION 42(1)(B))³

LOCAL AUTHORITY⁴
Borough Council of King's Lynn & West Norfolk
Boston Borough Council
Cambridgeshire County Council
City of Lincoln Council
East Lindsey District Council
Fenland District Council
Leicestershire County Council
Lincolnshire County Council
Newark and Sherwood District Council
Norfolk County Council
North East Lincolnshire Council
North Kesteven District Council
North Lincolnshire Council
North Northamptonshire Council
Nottinghamshire County Council
Peterborough City Council
Rutland County Council
South Holland District Council
South Kesteven District Council
West Lindsey District Council

³ Sections 43 and 42(B) of the PA2008

⁴ As defined in Section 43(3) of the PA2008

TABLE A4: NON-PRESCRIBED CONSULTATION BODIES

ORGANISATION
Burton Pedwardine and Burton Gorse Village Meeting

APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

CONSULTATION BODIES WHO REPLIED BY THE STATUTORY DEADLINE:
Anglian Water
Boston Borough Council
Burton Pedwardine and Burton Gorse Village Meeting
Canal and River Trust
East Lindsey District Council
Environment Agency
Forestry Commission
Historic England
Lincolnshire County Council
National Grid Electricity Transmission Plc
National Grid Gas Plc
NATS En-Route Safeguarding
Natural England
Newark and Sherwood District Council
North East Lincolnshire Council
North Kesteven District Council
Northern Gas Networks Limited
Peterborough City Council
UK Health Security Agency
West Lindsey District Council



Anglian Water Services

Thorpe Wood House
Thorpe Wood
Peterborough
PE3 6WT

www.anglianwater.co.uk

Our ref ScpR.BFEP.NSIP.23.ds

Todd Brumwell
EIA
The Planning Inspectorate

beaconfen@planninginspectorate.gov.uk

18 May 2023

Dear Todd

**Beacon Fen Energy Park (BFEP)
EIA Scoping Report consultation**

Thank you for the opportunity to comment on the scoping report for the above project, which is primarily within North Kesteven District, although parts of the cable route search area are located within Boston Borough District in Lincolnshire. The project is one of multiple solar projects in and around Lincolnshire that qualify as a nationally significant infrastructure project (NSIP) on which Anglian Water has been consulted by the Planning Inspectorate (PINS).

As a key, initial point, Anglian Water would want to draw to your attention the fact that the BFEP project is proposed on land which is part of the proposed site for the Lincolnshire Reservoir on which Anglian Water undertook public consultation between October and December last year. The indicative southern array of the BFEP project sits within land identified as the proposed site for the Lincolnshire Reservoir, including both the main reservoir area and embankments and surrounding infrastructure. A map of the proposed site for the Lincolnshire Reservoir and the BFEP has been provided as an Annex to this letter (Annex 1). Further commentary on the Lincolnshire Reservoir is provided below.

This letter firstly addresses the aspects of the BFEP Scoping Report which interrelate with the Lincolnshire Reservoir project including Chapter 9 Water Resources and Chapter 13 Socio Economics, then goes on to address wider issues in relation to the Scoping Report before considering standard EIA matters which Anglian Water would comment on as the appointed water and sewerage undertaker for the site shown on Figure 1.1. The identified BFEP site is north of the A52 between Swanton and south of the A153 and Anwick in the north Kirkby la Thorpe on the west and Bicker to the east.

The following response is submitted on behalf of Anglian Water in its statutory capacity and relates to water resources, potable water and water assets along with wastewater and water recycling assets.

Registered Office
Anglian Water Services Ltd
Lancaster House, Lancaster Way,
Ermine Business Park,
Huntingdon,
Cambridgeshire. PE29 6XU
Registered in England

Lincolnshire Reservoir comments

The Lincolnshire Reservoir forms a key part of the Water Resources East (WRE) regional plan and has been progressed with WRE and stakeholders over the past 24 months. The Lincolnshire Reservoir is identified as a key supply side option in Anglian Water's statutory draft Water Resources Management Plan (WRMP) and as agreed with regulators, including Ofwat and EA, is a strategic resource option necessary to deliver security of water supply for the East of England up to 2050 and beyond. Specifically, the reservoir is key to the delivery of regional environmental protection, economic growth and resilience to climate change and future drought events. As such, the Reservoir is being progressed through the regulated 'RAPID' (Regulators Alliance for Progressing Infrastructure Development, made up of Ofwat, the Environment Agency and the Drinking Water Inspectorate).

The scale of the Lincolnshire Reservoir is such that it automatically qualifies as an NSIP under the Planning Act 2008. Accordingly, the Reservoir project has formally been notified to the Planning Inspectorate following the inception meeting with PINS in October 2022. A Development Consent Order (DCO) application for the Lincolnshire Reservoir is currently programmed to be submitted in September 2025, following further consultation and scheme development. As set out above, the Lincolnshire Reservoir is a key supply side option included in both the WRE regional plan and Anglian Water's draft WRMP, demonstrating its critical regional importance in securing a resilient water supply.

The National Policy Statement (NPS) for Water Resources published in April 2023 establishes the inclusion of a project within a WRMP demonstrates the need for it in line with government policy. As set out above, the Lincolnshire Reservoir is a key supply side option included in both the WRE regional plan and Anglian Water's draft WRMP, demonstrating the Reservoir's critical regional importance in securing a resilient water supply.

A comprehensive and robust site selection process was undertaken for the Lincolnshire Reservoir, including through detailed engagement with stakeholders. The proposed site selected by that process was consulted on between October and December last year (whereby the site selection process was published for public review and comment).

The responses to that consultation have been reviewed to inform further scheme development ahead of the next round of public consultation, scheduled to take place in 2024. Despite extensive publicity of the Lincolnshire Reservoir consultation process locally and regionally, Beacon Fen Energy Park Ltd (BFEPL, the proposed Applicant for the BFEP project), did not provide any response.

The need for the Lincolnshire Reservoir established in the NPS is an "important and relevant" matter (in the language of section 104 of the Planning Act 2008) for the Secretary of State for Energy Security and Net Zero who will determine any DCO application for the BFEP. In light of that and given the multiple alternative sites that appear to be available to BFEPL, it appears to Anglian Water that BFEP would be unlikely to receive consent.

This is particularly the case, given there is a clear availability of alternative locations for the southern array of the BFEP that would not interfere directly with the Lincolnshire Reservoir. In view of the extensive publicity of the Lincolnshire Reservoir consultation process and proposed site, Anglian Water considers that there has been a lack of consideration of appropriate alternatives to the BFEP as proposed. As set out further below in Anglian Water's general comments, it also appears that BFEPL is not proposing to deal with this issue in the Environmental Statement appropriately. Anglian Water requests that any Scoping Opinion adopted by the Secretary of State states that BFEPL should specifically set out all reasonable alternatives considered including location and design options. For example, Anglian Water requests that the Environmental Statement for the BFEP addresses the rationale for the proposed connection to the Bicken Fen substation, the extent to which alternative land parcels were considered for the southern array and the criteria applied to select the land parcels to be utilised.

Anglian Water considers that given the strong policy support for the Lincolnshire Reservoir, which has been through a rigorous site selection process, we believe that BFEPL are unlikely to be able to sustain a case for development on the southern array. However Anglian Water would be happy to discuss the potential for BFEPL to pursue a revised layout which may enable the two projects to co- exist, which would be of benefit to all. Anglian Water is very keen to enter into considered pre application dialogue with BFEPL to ensure both projects are given the best chance of success.

General comments on the Scoping Report

Turning to other matters, Anglian Water considers, more generally, that the BFEP has not complied with PINS Advice Note 7, and that scoping is premature. For example, the very broad redline corridor for the cable corridor (and the fact it is termed a 'search area') suggests that the scope and nature of the BFEP is uncertain.

In reviewing the Scoping Report we would observe that the baseline data collected is extremely high level and in the main desk based. For a scheme of this size we would expect the BFEP to have undertaken some ground truthing, particularly in relation to ecology. There appears to be a serious lack of engagement with stakeholders on the scheme generally, and the approach to assessment and baseline data collection in particular. For an NSIP we would have expected to see evidence of engagement and even at this early-stage acknowledgement of any areas of agreement or areas of concern. It does not appear that any significant discussions have taken place which is contrary to PINS advice and the spirit of the Planning Act 2008. For example on the LVIA, viewpoints have been selected without discussion with the LPA. We note that para 5.9 of Advice Note 7 goes on to set out the expectation on the level of detail in the scoping report and the ability to identify likely significant effects. Anglian Water considers the design detail presented by BFEP Fen is lacking in required information.

The description of development is high level and because of this at times it is difficult to understand the proposals being presented. Indicative locations of the key infrastructure components, e.g. substation, transformers and Battery Energy Storage Systems, are not presented, simply a red line boundary. Without understanding the likely locations or alternatively illustrative examples of the infrastructure design and scale the potential for likely

significant effects to occur is hard to determine. Consequently, stakeholders responding to the underdeveloped Scoping Report do not have sufficient information on which to base EIA assessment scoping requests on. This risks wasting the time of stakeholders and causes uncertainty for landowners, communities and consultation bodies.

On alternatives, the approach outlined is deficient and does not meet the requirements of the EIA Regs which states at 14 (2) (d) the need for 'a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons the option was chosen, taking into account the effects of the development on the environment'. The approach to alternatives in the Scoping report proposes looking at a 'do nothing' scenario; design and layout alternatives, including technology; and cable route corridor options. None of these elements address the core requirement to describe the reasonable alternatives to the scheme or site, what information informed the choice of Beacon Fen and what were the alternatives considered and discounted, including the environmental rationale used in the decision making.

For cumulative effects, the methodology is broadly in line with PINS guidance but omits schemes already listed on the PINS website, which is usually one of the criteria for selecting other projects. We would have expected this to be a selection criteria, in which case the Lincolnshire Reservoir, for example, would be on the long list of schemes. We observe that the omission of Reasonably Foreseeable Future Projects presents at best a partial position and at worst may cause additional uncertainty and delay with an increase in costs for projects, delaying consideration of mutually beneficial design solutions and mitigation.

Anglian Water would have expected to see more detail on the EIA approach/stages, in particular on engagement, consultation and the production of a PEIR as part of the Statutory Consultation which BFEP plan for later this year and so which need now to form part of the scope of the EIA. One significant concern alongside the omission of the Lincolnshire reservoir NSIP is lack of a methodology for the water resources assessment. Anglian Water would expect this to be a point on which the Environment Agency would have provided input and advice prior to the Scoping request being submitted.

Water and sewerage undertaker comments

- The Scheme and existing infrastructure

There are significant existing Anglian Water assets including water mains along the road network which serve the local villages including Swanton, Screddington, Northbeck, Thorpe Latimer, Helpringham, Little Hale, Great Hale, Heckington, Howell, Ewerby Thorpe and Anwick. The site also crosses over with the Water Recycling Catchments of Swanton, Screddington, Helpringham, Heckington and Kirkby la Thorpe so includes sewers and rising mains serving local communities and businesses. Maps of Anglian Water's assets are available to view at the following address:

<http://www.digdat.co.uk/>

Anglian Water considers that the promoter fails to address Anglian Water assets in the report. The report only references pylons as utility infrastructure (table 4.1) and at paragraph 14.7.1 the

report advises that solar farms have the potential to affect existing infrastructure. Anglian Water notes through our work with other solar projects that these can identify utilities early in the project to avoid such affects and that site selection, layout and construction can then seek to minimise the need for pipelines to be moved or diverted. We would support efforts to minimise and potentially remove impacts on water and water recycling assets through project layout, design and construction approaches. Further advice on minimising and then relocating Anglian Water existing assets can be obtained from:

connections@anglianwater.co.uk

The report fails to identify Anglian Water or to indicate the approach that will be taken to engaging to minimise infrastructure impacts and the embedded (capital) carbon and climate change impacts of relocating utility assets). Anglian Water requests that it is added to the list of bodies on which the Construction Environment Management Plan (9.9.1) is consulted to ensure that assets are suitably identified and protected during construction to avoid the project's works and contractors impacting water and water recycling services. On this point we note that at 13.4.1 the report identifies water and sanitation as key services.

- Scheme assessment, design, mitigation and connections

We welcome the inclusion (3.3.1) of Water Resources as a topic which is in scope for the EIA. Other than the general recognition in paragraph 14.7.1 of the need to consult utilities providers and reference to the Heckington Water Recycling Centre (9.2.2) the promoter fails to indicate how water supply and sewerage capacity will be assessed either as part of avoiding impacts or in providing connections which may be required to serve the project during connection, operation or removal. As water supply and wastewater are not scoped out, Anglian Water considers they are scoped in for full assessment in the ES. We note that the report (4.4.13) identifies the importance of and need for the creation of wetland landscapes and in Table 5.1 that these water bodies can support protected species.

The identification of the importance of blue infrastructure to the landscape and biodiversity would support the management of surface water through Sustainable Drainage Systems (SuDS) which in addition to providing water for non- potable uses such as fire fighting avoid the need to connect to the public sewer network. This then avoids the potential need for additional network or treatment capacity with its attendant carbon costs. We note that SuDS are planned to be utilised (9.5.3) and would welcome clarification that no connection will be required to the public sewer network and consequently no general provision for the power to connect will be included in the draft Order.

The extensive list of blue infrastructure sites in Table 5.2 and recognition (14.2.13) offers the potential for the project through surface water management to create and enhance landscape scale biodiversity networks. This blue infrastructure gain is alluded to in the final bullet point of paragraph 5.6.3.

Anglian Water considers the Water Resources chapter should include water supply and water recycling effects. Anglian Water is progressing its Water Resources Management Plan and as a water scarce area designated by the Environment Agency and following detailed assessment

work, we are now advising that new non-household water supply requests (construction and operational phases) could compromise our regulatory priority of supplying existing and planned domestic growth. The flows needed to fill water storage tanks – in the event that the promoter decides not to use rainwater harvesting on site to meet this non potable demand – will need to be assessed by Anglian Water to advise whether a supply is feasible without jeopardising domestic supply or at a significant financial or environmental cost.

If the promoter requires a water connection, they will need to submit a request for water supply setting out the new daily demand for each stage of the project. It is not clear whether water use during construction will, for example, be needed for concrete production and so the promoter will need to establish whether these activities would be offsite or would need an on-site supply in order to assess the water supply options with Anglian Water. Further advice on water and wastewater capacity and options can be obtained by contacting Anglian Water's Pre-Development Team at:

planningliasion@anglianwater.co.uk

- Cumulative impacts

Given the extensive publicity of the Lincolnshire Reservoir consultation process locally and regionally, it is surprising that chapter 9 and specifically Table 9.1 does not include strategic water resources as a Receptor to be assessed. Furthermore, the exclusion of Anglian Water and Water Resources East from the list of bodies to be consulted (9.7.3) is a clear omission given the guidance in the NPPF (paragraphs 39, 40 and 43) and Overarching National Policy Statement for Energy (EN-1). We note at Appendix 1.1 that the promoter quotes the 25 Year Environment Plan and the goal to provide:

‘Clean and plentiful water; thriving plants and wildlife; reduced risk of harm from environmental hazards like flooding and drought’

Anglian Water requests that it is added to those consultation bodies. We welcome recognition (14.3.19, final bullet) that Water Resources play an important part in human health. This extends to access to blue and green infrastructure (14.3.23). We note that the project will not have significant adverse effects on human health (14.3.39) and that by omission it will not have beneficial effects either for local communities.

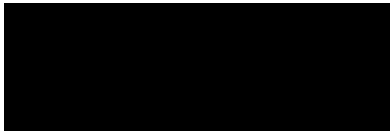
- Engagement

Anglian Water would welcome the urgent instigation of discussions with the promoter as the prospective applicant on a general basis (aside from the required engagement on the Lincolnshire Reservoir alluded to above), in line with the requirements of the Planning Act 2008 and guidance. Experience has shown that early engagement and agreement is required between NSIP applicants and statutory undertakers during design and assessment and well before statutory consultation. Consultation at the statutory PEIR stage would in our view be too late to inform design and may result in delays to the project. We would recommend discussion on the following issues:

1. Requirement for potable and raw water supplies if rainwater harvesting and other resources within the site are not used
2. Impact of development on Anglian Water's assets including abstraction
3. Requirement for water recycling (sewer) connections
4. The design of the project to minimise interaction with Anglian Water assets and specifically to avoid the need for diversions which have carbon costs
5. Confirmation of the project's cumulative impacts with Anglian Water projects
6. Draft Protective Provisions

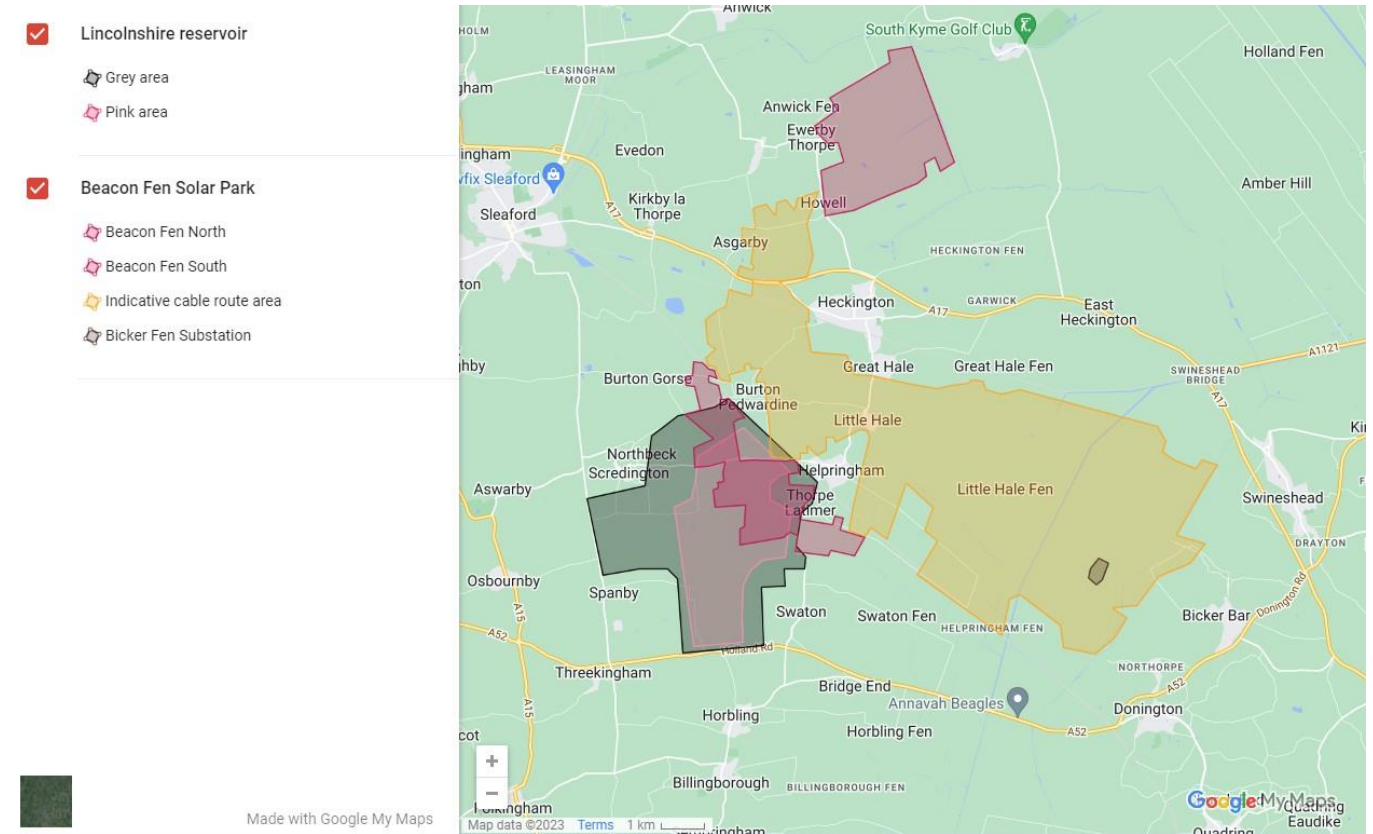
Finally, Anglian Water would like to recognise a strong commitment to working together with the promoter to see the issues we raise in the letter addressed and ensure both projects are given the best chance of success. Additionally, Anglian Water considers the development of renewable energy within our region to be a positive thing, contributing to the delivery of the UK's Net Zero Strategy and in line with Anglian Water's ambition of enabling sustainable economic and housing growth across our region. Please do not hesitate to contact Darl Sweetland, Anglian Water's NSIP lead, should you require clarification on the above response or during the pre- application to decision stages of the project.

Yours sincerely,



Hannah Stanley- Jones
Head of Sustainable Growth
cc info@beaconfenenergypark.co.uk

Annex 1 – Map of Lincolnshire Reservoir and Beacon Fen Solar Park



Lincolnshire Reservoir Pink area: area for the reservoir and its embankments.

Lincolnshire Reservoir Grey area: this is an initial wider area of land we could need for supporting infrastructure and during construction. This is also where we could include wildlife and environmental areas, spaces for leisure and recreation, education facilities and others. These are the additional developments that would help ensure the reservoir brings social and environmental benefits, alongside water supply. This area is only indicative at this stage and is subject to change following consultation, and as we develop our proposals.



B O S T O N

BOROUGH COUNCIL

Municipal Buildings, West Street, Boston, Lincolnshire, PE21 8QR

Application No: B/23/0150
Case Officer: Abbie Marwood

Email: planning@boston.gov.uk
Tel: 01205 314305

11 May 2023

Todd Brumwell,
The Planning Inspectorate, Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN

Dear Todd Brumwell,

Consultation EN010151 from the Planning Inspectorate to BBC for an Order granting Development Consent for the Beacon Fen Energy Park (the Proposed Development) at Beacon Fen Energy Park

Thank you for your recent consultation in relation to the above, which was received on 20-Apr-2023.

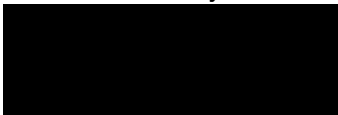
I write to confirm that the Council has the following observations in relation to the proposal: -

The proposed route of the cable would cross or be within proximity to South Forty Foot Drain Local Wildlife Site, listed buildings and Conservation Area within Bicker, along with a number of undesignated watercourses, drains and verges. Any potential for glint and glare on local receptors such as Boston Aerodrome should be taken into account.

In addition, cumulative effects of the cabling works of several other local schemes proposed at Temple Oaks, Folkingham, Heckington Fen and Bicker Solar Farm should be taken into account due to the potential for cumulative impacts on environmental, heritage and landscape receptors and the amenity of local residents.

Should you require any clarification on these points or wish to discuss the matter generally please contact the case officer Abbie Marwood.

Yours sincerely



Mike Gildersleeves
Assistant Director Planning and Strategic Infrastructure
Boston Borough Council, East Lindsey District Council and South Holland District Council

We can provide this information in other languages and formats for example, in large print, in Braille or on CD. Please phone 01205 314200.



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Burton Pedwardine & Burton Gorse Village Meeting

The Planning Inspectorate
Environmental Services, Bristol BS1 6PN
beaconfen@planninginspectorate.gov.uk

17 May 2023

Dear Mr Brumwell

Reference: Scoping Consultation – Beacon Fen Energy Park

Thank you for the opportunity to respond on behalf of Burton Pedwardine and Burton Gorse Village Meeting and provide comments on the EIA Scoping Report to inform the Environmental Statement (ES) for the proposed development of a solar farm.

The purpose of this response is intended to inform the Planning Inspectorate of the information that the Village considers should be provided in the Environmental Statement.

However, rather than simply providing the applicant with the knowledge for them to counter any concerns we may have, we believe it would be more beneficial to the Village to ensure instead that the Planning Inspectorate is made aware of the strength of feeling about this proposed development.

By way of background, Burton Pedwardine and Burton Gorse is a small medieval village with significant archaeological heritage. There are 40 properties, approximately 190 residents, and the village is surrounded by open countryside. There is no public transport and barely a pavement or street light. However, the residents do benefit from being surrounded by a rich plethora of biodiversity.

Following are further points that we want to ensure you are aware of:

- In 2022 Anglian Water announced its plans for a reservoir on land adjacent to the village, this is classified as a *Nationally Strategic Infrastructure Project*.
- In 2023, Low Carbon announced its plans for Beacon Fen Energy Park on land adjacent to the village, this is also a *Nationally Strategic Infrastructure Project (NSIP)*.
- Beacon Fen Energy Park overlaps with the reservoir proposal from Anglian Water.

In addition to being surrounded by NSIPs, there are already three solar farms in the vicinity: two in the Village, and one in the neighbouring village of Silk Willoughby. In addition, a fourth solar farm is

currently being considered by the Secretary of State for Heckington, also close by. Historically the Village has not been opposed to this type of technology. However, it is the scale and location of this project that we cannot support. The southern part of the proposed Beacon Fen Energy Park will envelop the western part of the Village, virtually surrounding residential properties. If this new solar farm is approved, Burton Pedwardine and Burton Gorse will become a tiny speck amongst a desert of glass. Living in and surrounded by glass is surely not good for anyone's mental health.

With the proposition of years of construction ahead, the impact on the landscape, ecology and residents will be devastating. Species may be lost, habitats may never recover, both leading to a very bleak future for this little corner of Lincolnshire.

To offer advice on the information that should be included in an Environmental Statement appears counterproductive, as put simply, an overwhelming majority of the residents in the Village do not support this proposal, and the remaining few own the land on which it is planned.

If further specific comments are required then we offer the following:

Site Description: the southern site is indeed "southwest of Heckington". However, part of it is also in the Village of Burton Pedwardine and Burton Gorse. This is not reflected in the description and subsequently leads those not familiar with the area to assume it is not adjacent to a settlement.

Access and Traffic: the Village is accessed by a series of single track roads with passing places. These type of roads can barely cope with the day to day traffic that already use them. They will not handle the heavy plant traffic that will be required during the construction of the solar farm.

Cultural Heritage: there are several areas of archaeological importance in Burton Pedwardine and Burton Gorse that must be protected. There are medieval earthworks throughout and surrounding the Village and its beautiful Church.

Ecology: there are many species that will be disturbed by the development. Not least deer, of which there are many that are already being corralled out of the area by existing solar farms.

Planning Policy Context: Appendix 1.1 page 182 is incorrect. Please refer to the Local Planning Authority for an accurate reflection of neighbourhood plans in the area.

To conclude, whilst we appreciate that this consultation was not to hear our objection, we plead with you to think carefully about this application as the impact on this community – the landscape, the wildlife and the people who live here - will be devastating.

Burton Pedwardine and Burton Gorse Village Meeting

May 2023



**Canal &
River Trust**

Making life better by water

By email only to:

BeaconFen@planninginspectorate.gov.uk

Your Ref EN010151

Our Ref IPP-194

Friday 20th January 2023

Proposal: Beacon Fen Energy Park

Location: Heckington, Lincolnshire

Waterways: River Witham

Thank you for your consultation relating to the above scheme. The Canal & River Trust is a prescribed consultee for the purposes of s42(a) Planning Act 2008 for proposed applications likely to have an impact on inland waterways or land adjacent to inland waterways.

We are the charity who look after and bring to life 2000 miles of canals & rivers.

Having reviewed the location of the project and the relationship of the proposed solar park and its associated development sites with our network, we do not believe that the proposals as shown would cross land owned or operated by the Trust. Our closest waterway is the River Witham approximately 7 kilometres north east of the site boundary. Should the scheme be amended to potentially affect the River Witham we would welcome further consultation on the proposals, so that we can advise about any potential impact for our network.

The Sleaford Navigation operates along the River Slea adjacent to the northern most tip of the site boundary and the Environment Agency operates the South Forty Foot Drain (Black Sluice Navigation) running through the east of the site. These navigations are neither owned nor managed by the Canal & River Trust, however, pursuant to the charitable objectives of the Trust, we support the preservation, conservation and protection of inland waterways for the public benefit.

We are aware that the Sleaford Navigation Trust (SNT) is dedicated to preserving the Sleaford Navigation and encouraging future regeneration of this waterway and support such initiatives. We advise that consideration is given to any response from SNT with regards to the impact of the proposal on SNT's preservation and regeneration objectives.

We are aware that the Environment Agency is dedicated to preserving the Black Sluice Navigation and encouraging future regeneration of this waterway through the Fens Waterway Link project and support such initiatives. We advise that consideration is given to any response from the Environment Agency with regards to the impact of the proposal on their preservation and regeneration objectives.

We note that Car Dyke is acknowledged in the Scoping Report as a Roman heritage feature on the eastern edge of the Ewerby Fen site boundary. It is noted as a Roman Canal on some of the maps enclosed with the Scoping Report. Whilst the full extent of the dyke is not scheduled we would recommend that the developer include the

Canal & River Trust

Fradley Junction, Alrewas, Burton-upon-Trent, Staffordshire DE13 7DN

T 0303 040 4040 E canalrivertrust.org.uk/contact-us W canalrivertrust.org.uk

non-scheduled element of this feature within their Environmental Statement as a non-designated heritage asset. Details of the extent and potential impacts of the proposal on this feature will then be correctly assessed.

Please do not hesitate to contact me with any queries you may have.

Yours sincerely,

Hazel Smith MRTPI
Area Planner - Midlands



<https://canalrivertrust.org.uk/specialist-teams/planning-and-design>

Canal & River Trust

Fradley Junction, Alrewas, Burton-upon-Trent, Staffordshire DE13 7DN
T 0303 040 4040 E canalrivertrust.org.uk/contact-us W canalrivertrust.org.uk



The Hub, Mareham Road, Horncastle, Lincolnshire. LN9 6PH
T: 01507 601111
www.e-lindsey.gov.uk

Mr. T. Brumwell,
Planning Inspectorate

By e-mail:-
beaconfen@planninginspectorate.gov.uk

Your Reference: EN010151-000008

Our Reference: S/086/00878/23/IC

Contact: Miss Michelle Walker

Ext: [REDACTED]

Email: [REDACTED]

Date: 16 May 2023

Dear Mr Brumwell,

APPLICANT: Beacon Fen Energy Park Limited,
PROPOSAL: Request for an EIA scoping opinion in connection with the Beacon
Fen Energy Park.
LOCATION: BEACON FEN ENERGY PARK

Thank you for consulting East Lindsey District Council on the EIA scoping opinion for the proposed Beacon Fen Energy Park.

Having considered the documentation provided this Council has no comments to make at this stage.

Yours sincerely

M. Walker

Michelle Walker
Deputy Development Manager

The Planning Inspectorate

[via email

beaconfen@planninginspectorate.gov.uk]

Our ref: RA/2023/145757/01-L01
Your ref: EN010151

Date: 17 May 2023

To whom it may concern,

EIA SCOPING OPINION: BEACON FEN ENERGY PARK. BEACON FEN ENERGY PARK, LINCOLNSHIRE.

Thank you for your consultation on the EIA Scoping Report for the above project. We have reviewed the Scoping Report by Wardell Armstrong, referenced ST19595 REP-001 and dated April 2023, and have the following advice:

For the most part, we agree with the environmental topics that the applicant proposes to scope out from further assessment. However, we do not agree with their proposal to scope out a Water Framework Directive (WFD) Assessment. Our detailed advice on topics within our remit is provided below:

Ecology & Biodiversity Net Gain

We note that ecology is to be scoped in for further assessment and agree this should be the case. The report identifies a number of possible receptors, including water-based priority species, but does not provide any detail on how watercourses are proposed to be crossed. This is likely to be a particular issue if the applicant is not proposing trenchless techniques.

We also support the applicant's intention to provide Biodiversity Net Gain as part of the proposals. New developments should not only protect watercourses and their riparian corridors but also provide overall net gain for biodiversity. Net gain for biodiversity is defined as delivering more or better habitats for biodiversity and demonstrating this through use of the Defra Biodiversity Metric. It encourages development that delivers biodiversity improvements through habitat creation or enhancement after avoiding or mitigating harm.

This approach is supported by section 4.5 of National Policy Statement EN-1 and also paragraphs 174 and 179 of the National Planning Policy Framework (NPPF).

The enhancement of biodiversity in and around development should be led by a local understanding of ecological networks, and should seek to include:

- habitat restoration, re-creation and expansion;
- improved links between existing sites;
- buffering of existing important sites;
- new biodiversity features within development; and
- securing management for long term enhancement

The Environment Act 2021 looks to ensure that the overall impact from development on the environment is positive. The Act includes measures to strengthen local government powers in relation to net gain and a minimum requirement of 10% biodiversity net gain. Although we recognise that provision of BNG is not yet mandatory for Nationally Significant Infrastructure Project, we encourage the applicant to consider an approach to development that results in measurable net gains in biodiversity, having taken positive and negative impacts into account.

The [Planning Practice Guidance \(PPG\)](#) provides guidance on the application of net gain and Institute of Ecology and Environmental Management, together with CIRIA and the Institute of Environmental Management and Assessment have published guidance on how to deliver net gain in practice. These can be downloaded [here](#).

Groundwater & Contaminated Land

Hydrogeology

The scoping area covers a large area and overlies several different geologies and aquifers. These range from unproductive (West Walton Formation, Tidal Flat Deposits, Oxford Clay Formation and Glaciofluvial Ice Contact Deposits), to Secondary undifferentiated (Till deposits) and Secondary A (Alluvium, Sleaford Sand and Gravel).

Part of the Beacon Fen South area is underlain by groundwater Source Protection Zones (SPZs) 1, 2 and 3. It is therefore very important that the Environmental Statement (ES) considers potential risks to these highly vulnerable receptors from the construction, operation and decommissioning of the development.

We note that there is no reference to the '[Environment Agency's approach to groundwater protection](#)' and our [groundwater protection guides](#). These provide an overview of the activities that are acceptable in SPZs. The following document may also be useful when producing the ES: [Protect groundwater and prevent groundwater pollution - GOV.UK \(www.gov.uk\)](#).

The Scoping Report does not make reference to potential artesian conditions in the area of the proposed development. Artesian conditions are known in the vicinity of the Beacon Fen development and should be included in the ES.

Chapter 9 summarises which receptors will be considered in the Water Resources section of the ES and includes consideration of changes to water quality and quantity of:

- Surface water receptors
- Hydro ecological receptors
- Groundwater receptors
- Water resource users (e.g., abstractions and private water supplies).

We are satisfied with this strategy, provided that our comments regarding artesian conditions are also taken into account.

Ground Conditions

Section 14.2 of the Scoping Report explains that ground conditions have been scoped out of the ES, but a standalone Phase 1 Ground Conditions Desk Study will be prepared and included as part of the application. We are satisfied with this approach and welcome the reference to the Land Contamination Risk Management guidance, which must be followed when carrying out the desk study and any subsequent assessments.

We may request that a requirement for investigating unsuspected contamination is included when we make our comments on the ES.

Flood Risk

The Scoping Report does not have substantial information in relation to flood risk. The site covers a large area with some of the site located in Flood Zones 2 and 3. We note some areas of the site cross Main Rivers (defined under the Water Resources Act 1991) namely the South Forty Foot Drain, Helpringham Eau, Hodge Dike and slight overlap with Heckington Eau, with other Main Rivers bordering the site.

We advise the applicant (if they have not already) to obtain flood risk data from the local area team. The request can be sent to LNenquiries@environment-agency.gov.uk requesting Product 4 Data.

The proposal for a solar farm is classified as 'Essential Infrastructure' according to [Annex 3](#) of the NPPF. In line with [Table 2](#) of the Planning Practice Guidance, the development will need to pass the Sequential and Exception Tests.

We also expect a flood risk assessment (FRA) to be submitted to us for review as part of the overall process of assessing the flood risk to the site, including any breach analysis, and we note that it is the applicant's intention to produce a standalone FRA. We're supportive of this approach. All sources of flood risk need to be considered within the FRA.

The FRA must demonstrate that the proposal will remain operational during the lifetime of the development and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development for its lifetime, which has been given as 60 years. We note that the applicant intends to produce a Decommissioning Statement, which we will require sight of to enable us to consider the flood risk impacts and how the floodplain will be returned to its natural state thereafter. Early engagement on this issue would be advisable.

Water Quality

The applicant has proposed to scope out a compliance assessment under the WFD, but we consider this should be completed. The first step of a WFD assessment is to make sure that the existing risk assessment covers the receptors that are protected by WFD. This has not been done, although we note that they have scoped in surface water receptors earlier in the Scoping Report.

The applicant must demonstrate that their mitigation measures are robust enough to not degrade the surrounding surface waters, and this is something that a WFD assessment would highlight. Whilst they will follow pollution prevention guidelines, and have a sediment management plan, they cannot be sure that they will not degrade the surrounding surface waters. It may be appropriate for them to carry out water samples before, during and after construction to ensure that they have not deteriorated the water quality. The cable route has also not yet been defined, but the crossing of main rivers is likely to be required, and as such consideration this should be included in a WFD assessment.

Previous solar farms consented through the Development Consent Order (DCO) process have completed a WFD assessment. We believe that this should be a standard practice and consistent across applications. This approach is supported by section 5.16 of National Policy Statement EN-1.

Additional data and guidance for the applicant is available at the following links:

- Pollution Prevention Guidance <https://www.gov.uk/guidance/pollution-prevention-for-businesses>
- Environmental legislation in England by the Water Environment (Water Framework Directive, WFD) (England and Wales). <https://www.legislation.gov.uk/ukxi/2017/407/made>
- Monitoring Data: <https://environment.data.gov.uk/water-quality/view/landing>
- Catchment and Status Data: <https://environment.data.gov.uk/catchment-planning/>

Waste

Movement of waste off-site – Duty of Care & Carriers, Brokers and Dealers Regulations

The Environmental Protection (Duty of Care) Regulations 1991 for dealing with waste materials are applicable to any off-site movements of wastes.

The code of practice applies to you if you produce, carry, keep, dispose of, treat, import or have control of waste in England or Wales.

The law requires anyone dealing with waste to keep it safe and make sure it's dealt with responsibly and only given to businesses authorised to take it. The code of practice can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/506917/waste-duty-care-code-practice-2016.pdf

If you need to register as a carrier of waste, please follow the instructions here:

<https://www.gov.uk/register-as-a-waste-carrier-broker-or-dealer-wales>

Movement of waste off-site – Duty of Care & Carriers, Brokers and Dealers Regulations Characterisation and classification of waste

In order to meet the applicant's objectives for the waste hierarchy and obligations under the duty of care, it is important that waste is properly classified. Some waste (e.g., wood and wood-based products) may be either a hazardous or non-hazardous waste dependent upon whether or not they have had preservative treatments.

Proper classification of the waste both ensures compliance and enables the correct

onward handling and treatment to be applied. In the case of treated wood, it may require high temperature incineration in a directive compliant facility. More information on this can be found here: <https://www.gov.uk/how-to-classify-different-types-of-waste>

The control of emissions from Non-Road Going Mobile Machinery (NRMM) at major residential, commercial or industrial sites

Where development involves the use of any non-road going mobile machinery with a net rated power of 37kW and up to 560kW, that is used during site preparation, construction, demolition, and/ or operation, at that site, we strongly recommend that the machinery used shall meet or exceed the latest emissions standards set out in Regulation (EU) 2016/1628 (as amended). This shall apply to the point that the machinery arrives on site, regardless of it being hired or purchased, unless agreed in writing with the Local Planning Authority.

This is particularly important for major residential, commercial, or industrial development located in or within 2km of an Air Quality Management Area for oxides of Nitrogen (NOx), and or particulate matter that has an aerodynamic diameter of 10 or 2.5 microns (PM10 and PM2.5). Use of low emission technology will improve or maintain air quality and support LPAs and developers in improving and maintaining local air quality standards and support their net zero objectives.

We also advise, the item(s) of machinery must also be registered (where a register is available) for inspection by the appropriate Competent Authority (CA), which is usually the local authority.

The Environment Agency can also require this same standard to be applied to sites which it regulates. To avoid dual regulation this informative should only be applied to the site preparation, construction, and demolition phases at sites that may require an environmental permit.

Non-Road Mobile Machinery includes items of plant such as bucket loaders, forklift trucks, excavators, 360 grab, mobile cranes, machine lifts, generators, static pumps, piling rigs etc. The Applicant should be able to state or confirm the use of such machinery in their application to which this then can be applied.

Pollution Prevention

We welcome the applicant's intention to produce a Construction Environmental Management Plan and assume this will be secured via an appropriate Requirement.

Environmental Permitting Regulations

There are a number of additional permits or consents that the applicant may require under the Environmental Permitting Regulations (EPR), and these are discussed below:

Dewatering / Abstraction

If dewatering is required, the development may require an environmental permit if it doesn't meet the exemption in The Water Abstraction and Impounding (Exemptions) Regulations 2017 Section 5: Small scale dewatering in the course of building or engineering works.

[Temporary dewatering from excavations to surface water: RPS 261 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/temporary-dewatering-from-excavations-to-surface-water-rps-261).

If the development doesn't meet the exemption, and requires a full abstraction licence, the applicant should be aware that the Lincolnshire Limestone is closed for new consumptive abstractions in this area. There may be water available for consumptive abstraction in the Bain Sands and Gravels. More information can be found here: [Witham abstraction licensing strategy - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

Please note that the typical timescale to process a licence application is 9-12 months.

An abstraction licence may also be required depending on the volume needed for dust suppression. Water in the area can be scarce during the warmer, drier months of the year and may not be readily available. The applicant may need to consider having water storage in place sooner rather than later ready for use for dust suppression purposes.

Discharge of Water

The applicant may also need to consider discharge of groundwater, especially if it is contaminated. If the developer identifies the need to discharge to surface water during construction, then a permit may also be required. More information can be found here: <https://www.gov.uk/guidance/discharges-to-surface-water-and-groundwater-environmental-permits>

A permit does not mean they can deteriorate the water course and may not be granted. Only clean, uncontaminated water should be discharged to surface water or groundwater and any permits need to be planned for well in advance of construction.

Discharging runoff to watercourses has the potential to transport pollutants such as herbicides/ pesticides/ nitrates/ phosphates and silt and should be a last resort with mitigation in place to reduce the impact.

Additional guidance in relation to discharging and permits is available at the following links:

- <https://www.gov.uk/guidance/discharges-to-surface-water-and-groundwater-environmental-permits>
- <https://www.gov.uk/guidance/get-advice-before-you-apply-for-an-environmental-permit>

Flood Risk Activity Permit

There are a number of main rivers within the scoping boundary. The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert
- in the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission

For further guidance please visit <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our National Customer Contact Centre on 03708 506 506. The applicant should not assume that a permit will automatically be forthcoming

once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

The scoping report does not discuss the specific measures proposed to cross the watercourses identified, but we welcome the production of a watercourse crossing survey and would welcome early discussions on this.

If any fencing is to be erected on the site, we would request fences are not within 8m of the flood defence or main river edge to allow inspections of the assets and watercourse to be unimpeded. A buffer zone of 8m from any watercourse or asset would be desirable. We would again, encourage early engagement should this not be achievable.

There is no mention at this stage regarding whether the applicant will seek to dis-apply the Environmental Permitting Regulations 2016. Whilst disapplication is common practice in DCO proceedings, we still require to be formally notified of this intention. If disapplication is formally notified to us, we still require discussions with the applicant around the proposals and will secure our interests by way of approval of plans through Protected Provisions. There is no guarantee that we will agree to dis-apply EPR.

Use of Waste On-site

If materials that are potentially waste are to be used on-site, the applicant will need to ensure they can comply with the exclusion from the Waste Framework Directive (article 2(1) (c)) for the use of, 'uncontaminated soil and other naturally occurring material excavated in the course of construction activities, etc...' in order for the material not to be considered as waste. Meeting these criteria will mean waste permitting requirements do not apply.

Where the applicant cannot meet the criteria, they will be required to obtain the appropriate waste permit or exemption from us.

A deposit of waste to land will either be a disposal or a recovery activity. The legal test for recovery is set out in Article 3(15) of the Waste Framework Directive as:

- Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- We have produced [guidance](#) on the recovery test.
- You can find more information on the Waste Framework Directive here: <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-waste-framework-directive>
- More information on the definition of waste can be found here: <https://www.gov.uk/government/publications/legal-definition-of-waste-guidance>
- More information on the use of waste in exempt activities can be found here: <https://www.gov.uk/government/collections/waste-exemptions-using-waste>

Non-waste activities are not regulated by us (i.e., activities carried out under the CL:ARE Code of Practice). However, the applicant will need to decide if materials meet End of Waste or By-products criteria (as defined by the Waste Framework Directive). The 'Is it waste' tool, allows you to make an assessment and can be found here: <https://www.gov.uk/government/publications/isitwaste-tool-for-advice-on-the-by-products-and-end-of-waste-tests>

Environment Agency Land

There are some areas of land, specifically around main rivers, which are land owned by the Environment Agency. Due to the large scoping area, it is unclear at this stage whether this land will be affected by the proposals, but we would welcome ongoing discussions with the applicant about this.

We trust this advice is useful.

Yours sincerely

Miss Lizzie Griffiths
Sustainable Places - Planning Specialist

Direct dial: [REDACTED]

E-mail: NIteam@environment-agency.gov.uk

From: [Squire, Sandra](#)
To: [Beacon Fen](#)
Subject: EN010151 - Beacon Fen Energy Park Scoping Opinion
Date: 11 May 2023 12:11:20
Attachments: [image001.jpg](#)

Thank you for consulting the Forestry Commission on this proposal.

As the Governments forestry experts, we endeavour to provide as much relevant information to enable the project to reduce any impact on irreplaceable habitat such as Ancient Semi Natural woodland, as well as other woodland.

We are satisfied there is no Ancient Woodland within the development area. However, there are numerous small fragmented woodlands within the development area.

We note the scoping report suggests woodland will be retained and woodland creation will be undertaken to compensate for any losses and to enhance existing woodland where possible. With planned introduction of woodland shelter belts.

We would recommend that planting should be targeted to enhance existing woodland and ecological networks by buffering the existing woodland to create larger blocks of ideally at least 5ha. Species and provenance of new trees and woodland need to be considered to establish a more resilient treescape which can cope with the full implications of a changing climate. When planting new trees and woodland, ensure that biosecurity is robust to avoid the introduction of pests and diseases.

Details should be provided of how the existing trees and woodlands will be protected during the construction phase, protection measures can include taking care not to cut tree roots or causing soil compaction around trees (e.g., through vehicle movements or stacking heavy equipment) or contamination from poisons.

Access to the woodlands should also be considered for future management, as woodland management will improve and maintain biodiversity. We would expect to see hedgerows and individual trees within a development site considered in terms of their overall connectivity between woodlands affected by the development.

If any information is required on woodland planting and management, please do not hesitate to contact me.

Best wishes

Sandra

Sandra Squire

Local Partnership Advisor
East & East Midlands

Tel: 



From: [Allen, Tim](#)
To: [Beacon Fen](#)
Cc: [Nicholas, Matthew](#)
Subject: EN010151 - Beacon Fen Energy Park - EIA Scoping Notification and Consultation our ref PL00792862
Date: 18 May 2023 20:39:00
Attachments: [image33a156.JPG](#)

**Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11
Application by Beacon Fen Energy Park Limited (the Applicant) for an Order granting Development Consent for the Beacon Fen Energy Park (the Proposed Development)**

Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested

Historic England Advice

Thank you for consulting Historic England on the EIA scoping for this solar scheme with associated infrastructure and cable connections.

We welcome that the historic environment is scoped in both for construction and as built impacts.

Impacts may occur in association with the ground works striking buried archaeological remains and through setting impacts, the introduction of new hydrological pathways or barriers as a result of cable installation may also have longer term impacts upon buried remains than those associated with the installation itself.

The appropriate and proportionate management of archaeological and project risk requires a stage process of investigation with appropriate techniques for the archaeological remains likely to occur. Desk-based assessment and deposit modelling is key to targeting of appropriate investigation techniques. Whilst there is considerable scope to avoid harm to buried remains through the layout and detailing of solar schemes this elasticity can only be effectively deployed if the archaeological resource is well characterised, for example by understanding where burial sites or building remains sensitive to piling occur or where cable routes may encounter buried wet remains in former water courses or mires. Certain classes of site such as military skirmishes require bespoke techniques such as structured metal detector survey and therefore early targeting from sources such as the Portable Antiquities Scheme data.

A staged programme of archaeological survey and investigation is necessary to effectively manage risk and inform design and the decision making process, we refer you to the detailed advice of the local authority archaeological curators in these matters supported by the expertise of our science advisor and to our documents :-

<https://historicengland.org.uk/images-books/publications/planning-archaeology-advice-note-17/>
<https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/>
<https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/>

We refer you to structured approach to the assessment of setting impacts set out in our <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/>

Please see also our published general advice on commercial renewables
<https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/>

Please add HEE to the advisors noted in 6.2.1 of scoping report.

At 6.3 and 6.4 of the scoping report further consideration should be given to the banding of assets appropriate to their importance in particular the description of Gii listed buildings, Gii registered landscapes and conservation areas as of medium importance and locally listed buildings as of low importance. The bar for substantial harm set in 6.4 is too restrictive. Overall the identification of significant impacts should address that in NPS and NPPF that all harm to designated heritage asserts requires clear and convincing justification and as such for the ES to be useful in the decision making process all harms to designated or equivalent importance assets should be addressed or at the least referenced.

Yours sincerely
Tim Allen

Tim Allen MA FSA
Development Advice Team Leader (North)

Midlands Region
Historic England
The Foundry, 82 Granville Street, Birmingham B1 2LH

Direct Line 
<http://www.historicengland.org.uk/> | [@HistoricEngland](https://twitter.com/HistoricEngland)



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beaconfen@planninginspectorate.gov.uk
via email only

Neil McBride
Head of Planning
Planning Services
Lincolnshire County Council
County Offices
Newland
Lincoln LN1 1YL
Tel: [REDACTED]
E-Mail: [REDACTED]

16 May 2023

Dear Mr Brumwell

**PLANNING ACT 2008 AS AMENDED AND INFRASTRUCTURE PLANNING (EIA)
REGULATIONS 2017 REGULATIONS 10 AND 11**

**SCOPING OPINION FOR ORDER GRANTING DEVELOPMENT CONSENT FOR BEACON FEN
ENERGY PARK**

LOCATION: BEACON FEN ENERGY PARK, HELPRINGHAM

Thank you for your letter dated 20 April 2023 inviting the Council's comments in respect of the above.

The Council have reviewed the information provided in the scoping report prepared by Wardell Armstong and offers the following comments and request the Planning Inspectorate take these comments into consideration in preparing the Scoping Opinion.

Section 1 Introduction – no comment to make.

Section 2 Proposed Development – note that the details set out of the proposed development are largely indicative at this stage but some initial comments are set out below:

The scheme under consideration for the scoping opinion is a 600 MW PV plant with a battery storage system of similar capacity involving around 1,000 hectares of land. In respect of the scheme it is requested that the following points should be confirmed through the Scoping Opinion:

- Will the installation take energy from the grid and store it, releasing it back to the grid when required? That is to say, is it a grid storage resource as well as a grid-connected energy supplier? If so, is there any estimate of how much energy it will store in this way?

- Design life of the scheme is pegged for 'at least 60 years', (possibly even more for operational life). This aspect needs some clarification as this seems to be well beyond the 40 years considered in such plants. Durability of components is a key issue. How long can the panels be expected to last (in years)? Have replacement panels been included in the programme? The same applies to the batteries, which have an even shorter lifetime.

2.8 Alternatives

Alternatives are not yet considered in any detail but the Council agrees that a consideration of alternatives should be presented. Reasonable alternatives should include different layouts, scales, technologies, adapted design parameters as well as different locations. The Environmental Statement should explain in detail what criteria have been used as well as reasons why other alternatives have been dismissed. Consideration needs to be given to looking at the alternative of keeping the land, subject of this project, in agricultural use and its contribution on food production in the region.

Section 3 – Approach to EIA – agree to the general approach to the EIA set out in Section 3.2 including the methodology set out for cumulative impact assessment methodology. In particular the cumulative impacts of the other Development Consent Order applications that are at various stages of the process within the County needs to be taken into consideration.

Section 3.4 - Aspects to be scoped out – do not agree that **waste** should be scoped out. More detail and justification is required to substantiate the assertion that the amount of waste to be generated during the operation phase is minimal. As set out above the longevity of projects such as this are 40 years yet this is proposed for 60 and consequently it can reasonably be assumed that most of the infrastructure necessary for this project will need to be replaced at least once during the operational phase. Currently there are 10 other large solar projects in the County at various stage of the Development Consent Process creating a potential 5000MW of energy. All the infrastructure required for these projects, if approved, would be constructed during a similar timescale and is expected to be replaced at least once during the operational phase putting significant pressure on the County's waste facilities and consequently this topic should be scoped in to set out how this will be addressed.

Accidents and Disasters – do not agree that accidents and disasters should be scoped out due for potential for battery fires from developments of this nature. Therefore consider that there should be a specific chapter on this topic in the ES. Including details of crime prevention and in respect of major accidents to include sabotage criminal activity is assessed as pre-planned damage to the scheme could leave it vulnerable to a major accident.

Aspects to be scoped in

Section 4 Landscape and Visual - the site is located near Sleaford, Lincolnshire, and centred at National Grid reference (NGR) TF 16348 42178. The site comprises two distinct areas of land situated to the north and to the southwest of Heckington, adjacent to Ewerby Thorpe and Thorpe Latimer, respectively.

The Proposed Development would have a generation capacity of approximately 600MW, with the BESS of a similar capacity, and would be capable of powering approximately 190,000 homes. The two sites comprise an area of approximately 1036ha. Between the two sites a wide area has been identified to locate the cable route to connect to the national grid via the existing sub-station at Bicker Fen.

The report identifies the infrastructure of the project and identifies that there are two options for the central inverters and the transformers, either indoor in a purpose built structure or outdoor. The location of these and the choice of indoor or outdoor would need to be carefully selected in recognition of sensitive receptors. Similarly, the location and determination of the battery energy storage systems needs to assess against the sensitivity of the receptors across the site.

The development has an anticipated construction period of 24 to 36 months, with an operation life of 60 years. At this stage, detail of the construction, which is expected to have an adverse impact is not considered to a significant level of detail and would need, again, to identify and consider fully the impact on sensitive receptors across the site.

The assessment of potential Landscape and Visual matters and evolving proposals relating to the Beacon Fen Solar Project, as a Nationally Significant Infrastructure Project (NSIP), shall follow an iterative process of engagement and consultation to ensure the following are not fixed at this stage and are discussed, developed, and agreed at subsequent technical meetings:

- Landscape and Visual Impact Assessment (LVIA) Methodology;
- ZTV parameters;
- Study Area extents (distance);
- Viewpoint quantity and locations;
- Photomontage/Accurate Visual Representations (AVRs):
 - Quantity and location;
 - Phase depiction;
 - AVR Type and Level
- Mitigation Measures/Landscape Scheme/Site Layout; and
- The extent as to which a Residential Visual Amenity Assessment (RVAA) should be considered (based on the Landscape Institute TGN 2/19) if there are residential properties with receptors likely to experience significant effects to their visual amenity.

We would also expect the production of the Landscape and Visual chapter of the Environmental Statement (ES), which would be in the form of a Landscape and Visual

Impact Assessment (LVIA), and any supporting information (such as plans or figures) reflect current best practice and guidance from, as a minimum, the following sources:

- ‘*Guidelines for Landscape and Visual Impact Assessment*’, (GLVIA3), April 2013 by the Landscape Institute (LI) and Institute of Environmental Management and Assessment (IEMA);
- ‘*An Approach to Landscape Character Assessment*’, Natural England (2014);
- ‘*Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals*’, 17 September 2019 by the Landscape Institute (LI);
- ‘*Technical Guidance Note (TGN) 1/20 Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)*’, 10 January 2020 by the Landscape Institute (LI) ; and
- ‘*Technical Guidance Note (TGN) 2/21 Assessing landscape value outside national designations*’, May 2021 by the Landscape Institute (LI).

At this initial stage of the NSIP process, the content and level of information provided by the developer within *Chapter 4* (Landscape and Visual), and *Figures 4.1 to 4.5*, are generally considered satisfactory, however, as stated previously, we would expect to discuss this content and approach as part of the iterative process, and the following should be considered in the evolving assessment and layout:

Viewpoints

Figures 4.1 and 4.3 of the scoping report identifies 16 proposed viewpoints across the two PV sites and the area identified for the cable connection to the sub-station. AAH have undertaken a site visit in early May 2023, and the site characteristics suggest that these viewpoints need to be supplemented by additional ones from further distances in all directions. The selected 16 appear to be appropriate for closer scrutiny of sensitivity, however the final locations and number of viewpoints are to be agreed with LCC and other relevant stakeholders.

Photomontages

To gain an understanding of the visibility of the development and how the panels and infrastructure would appear in the surrounding landscape, Photomontages/Accurate Visual Representations (AVRs) should be produced. It is currently proposed to develop four of the 16 viewpoints as photomontages, however it is not clear the justification for the selection of these as photomontages. Viewpoints 9 and 10 have close proximity, whilst the others are spread with a bias to the northwest of the sites, there are currently no proposed photomontages to the southeast of the sites.

The number and location of viewpoints to be developed as Photomontages/AVRs should be agreed with LCC and other relevant stakeholders and produced in accordance with LI guidance: *TGN 06/19 Visual Representation of Development Proposals*. At this stage, it is deemed appropriate that these should be produced to illustrate the proposals at different phases: Existing Situation (baseline), Operational (year 1) and Residual with planting established (10 to 15 years). The Photomontage/AVR Level and Type is to be discussed and agreed.

Methodology

The scoping report considers the methodology of the ES in chapter 3 and confirms that the LVIA will be carried out in accordance with the GLVIA3 best practice and undertaken by suitably qualified personnel. We would request that the most up to date technical guidance also be used, such as the recently published LI *TGN 2/21 Assessing landscape value outside national designations*.

Chapter 4 considers landscape and visual matters in detail, it is supplemented by the following drawings, which have been assessed during the writing of this scoping report:

- Figure 4.1 Bare ground Zone of Theoretical Visibility)
- Figure 4.2 Topography
- Figure 4.3 Screened Zone of Theoretical Visibility
- Figure 4.4 Landscape Character
- Figure 4.5 Sensitive Receptors and Designated Sites.

Scope of the Study Area

Field surveys and the ZTV have been used to determine a study area of 5km. Following a site visit by AAH in May 2023 the 5km extent to the study area appears to be appropriate, however the viewpoints currently identified do not include any locations from significant distances from the PV site locations. Additional viewpoints need to be identified in all directions to consider the impacts of long range views. With this in mind the visual connectivity of spires across the study area appears significant and could be impacted by both the development and any proposed mitigation.

The ZTV methodology (figures 4.1 bare ground and 4.3 screened and section 4.5 of the report) utilises a proposed height of 4.5m, however does not contain details of the dimensions of all structures which will form part of the development, such as battery storage. Consequently, the ZTV may be unrepresentative of the full extent of visibility and the ZTV should clearly demonstrate the full extent of the proposed development stating what has been included and the ultimate height/scale. This is of particular interest given the potential options of indoor or outdoor ancillary facilities within the development.

Landscape

Published landscape character areas have been identified, however, to align with GLVIA3 the LVIA should include an assessment of landscape effects at a range of scales and include a finer grain landscape assessment that includes the Site and immediate area and that also considers individual landscape elements such as trees and hedgerows, woodlands, ponds/water features, or historic landscape features.

Visual

The visual assessment should take account of the 'worst case scenario' in terms of winter views, and effects associated with landscape mitigation at the Operational Phase (year 1), Residual Phase with planting having established (10 to 15 years), and at the Decommissioning Phase.

The LVIA should ensure all elements associated with the development are considered and assessed, such as battery storage and boundary fencing, which may be more visible than panels due to height and mass.

The visual assessment should include for visual receptors, and not just an assessment of any agreed viewpoints. It should also clearly cross reference viewpoints to associated receptors.

Cumulative Impacts

Cumulative Landscape and Visual Impacts should be assessed, particularly in regard to the Heckington Solar Project.

Mitigation and Layout

As this is an iterative process, at this stage no mitigation measures have been considered in detail. The areas identified as locations for the PV arrays and associated infrastructure are broad and certain aspects of the design remain to be finalised. Likewise, the area identified as potential route for the connecting cable is of significant size. The design of mitigation needs these aspects to be resolved, however the impact on receptors should be used to inform the design of the proposals. The mitigation should reflect the open character of the study area and retain connectivity to key aspects such as the numerous church spires across the small settlements within the study area.

However, best practice guidance, relevant published landscape character assessment's and Local and County Council Policy and Guidance shall be referred to and implemented as appropriate. We would also expect the landscape and planting scheme is coordinated with other relevant disciplines, such as ecology or civils (e.g., SuDS features), to improve the value of the landscape and reflect appropriate local and regional aims and objectives. Any Landscape Scheme and associated Outline Management Plan should accompany the ES.

Section 5 Ecology – Council agrees that this matter should be 'scoped in' and appropriate assessment included as part of the ES.

Section 6 Cultural Heritage – Regarding the Study Area note that in section 6.2.1 *'The study area for designated heritage assets would be set at 5km.'* The scoping report goes on to say that *'However, this approach will be flexible and considerate of an asset's importance.'* It needs to be noted that the significance of each asset must be assessed prior to scoping which assets would be affected. Modelling should particularly include any identified assets which have the potential to be visible or have their setting affected. Potential impacts on views to from and across and the interrelationships of heritage assets should also be included.

Note in section 6.2.2 that *'The study area has been identified through consideration of Lincolnshire County Council's (LCC) guidance for National Significant Infrastructure Projects (NSIP),'* this is 2km for non-designated assets.

Note that while the Current Baseline (section 6.4) includes Beacon Fen North, Beacon Fen South and the Cable Route Area, the Study Area only uses the phrase 'Site boundary' (section 6.4.2). The Study Area needs to include not only the main site boundary but also the cable route area.

Design Assumptions (section 6.5.2) includes proposed new planting. Note the proposed mitigation measures may impact buried archaeology and the settings and experience of heritage assets. While only small holes is the initial impact of tree planting, the root structures of growing and mature trees can damage and destroy surviving archaeological features and change soil chemistry and hydrology, storm damage can uproot trees and voids can be created after the tree dies and the root withers. Areas of proposed tree planting will therefore need to be adequately evaluated to determine the presence, depth, extent and importance of surviving archaeology. This is also true for any proposed mitigation measures such as landscaping, lake and pond creation or habitat construction where ground impact and construction impact could also lead to potential impacts on surviving archaeology, and there is need to consider the potential impacts on heritage asset settings, their interrelationships and the landscape itself.

Note that potential impacts on buried archaeology and effects on settings is recognized.

Section 6.6.9 says that *'If the cable route is constructed exclusively below ground, indirect impacts to the significance of heritage assets from this element of the Proposed Development could be scoped out of further assessment.'* Please clarify what is meant by **indirect impacts**.

The assessment of heritage assets and impacts within the landscape needs to begin from an understanding of the significance of each heritage asset in order to assess the potential impact of the development upon them and put forward any potential benefit or mitigation of proposed negative impact. It is not just potential visual impact with views to, from and across any other heritage asset which may be affected and how it can be viewed from any point which is publicly accessible, it's also how the heritage asset is experienced kinetically and within its landscape. Assessment of all this must start with an understanding of the significance of each heritage asset and any interrelationships it may have with other heritage assets as well as the landscape in which it sits, for example remnant field boundaries of the field system that surrounded and supported a Medieval village. Assessments of significance should be undertaken for all designated and undesignated assets which may be affected to ensure any assets subject to proposed descopeing has an evidence base.

Section 6.6.10 states that *'There will be no impacts to the archaeological resource as a result of the decommissioning of the Proposed Development.'* Ripping out spikes and concrete slabs, construction traffic and tracking across the site, site compounds and infrastructure may all be part of the decommissioning phase. It is therefore as likely to have as high, if not greater, impact as the construction phase and will also need to be considered as part of the EIA process.

Regarding **Table 6.1 Summary of Likely Significant Effects, do not agree** that in the Operational Phase for Archaeological Assets *'There should be no impacts to the archaeological resource during this phase of works.'*

Do not agree that in the Decommissioning Phase for Archaeological Assets *'Assuming the existing access tracks are being utilised, and there is no ground disturbance beyond that undertaken in the construction phase, there would be no impact to the archaeological resource.'* Please see above for decommissioning impacts.

Regarding **Table 6.2 Matters to be scoped out of the assessment** the section under Operational Phase for Archaeological assets states that *'Direct physical effects on assets during the operation of the Proposed Development (as physical effects will only occur during the construction which will be mitigated as required)'* We do not agree. The Operational Management Plan will need to include provision for archaeological work during maintenance and alterations especially in areas where preservation in situ has been used in mitigation.

Do not agree with the section under Decommissioning Phase for Archaeological assets: *'Direct physical effects on assets during the decommissioning phase of the Proposed Development (as physical effects will only occur during the construction which will be mitigated as required).'* Please see above for decommissioning impacts.

Section 6.7.1 states that the ES will be supported by documents including an Archaeological Desk Based Assessment and an Aerial Assessment. It's vital that a competent full desk based assessment (DBA) be completed at the earliest opportunity as desk based work provides the basis for initial understanding of potential impacts and informs the intrusive evaluation phase.

A full competent LiDAR and air photo assessment including analysis and interpretation is required with full aerial photo coverage using all available oblique and vertical air photos including the Historic England Archive and Cambridge University Collection of Air Photos as well as RAF and Ordnance Survey photos including those held by Lincolnshire County Council.

The DBA, a full air photo/LiDAR assessment and the geophysical survey results form the basis for the trial trenching programme. The full suite of standard archaeological evaluation is required and trenching results are essential for understanding the site specific impact of the development. The evaluation work must be completed in time to inform the mitigation strategy which will lay out how the developmental impact on archaeology will be dealt with, therefore this will need to be submitted as part of the EIA.

Section 6.7.7 states that *'Further discussions will be held with the Lincolnshire County Council Archaeologist during the preparation of the EIA, to ascertain the need for/detail of any further archaeological investigation and necessary mitigation, including in relation to any requirement to be proposed in the DCO in respect of the same.'* This implies that archaeological evaluation and mitigation may not be required and if so it would be post-DCO consent. Given the size and nature of the proposed development there will certainly be archaeological impacts, so reasonable levels of archaeological evaluation including trial trenching are necessary to get an understanding of the presence, extent, character and significance of archaeology across the impact zone and to provide the basis for a reasonable and fit for purpose mitigation strategy to deal with the development's impact.

The evaluation work must be completed in time to inform the mitigation strategy which will lay out how the developmental impact on archaeology will be dealt with, therefore this will need to be submitted as part of the EIA. Expect the desk based evaluation to be complete and the field evaluation to be well underway by the time the PEIR is produced.

Regarding that statement *'to ascertain the need for/detail of any further archaeological investigation,'* as stated above the standard range of archaeological evaluation is required and that includes trial trenching not only across known or suspected archaeology but also across the 'blank' areas to obtain baseline evidence where previous evaluation techniques have not identified archaeological remains. Trenching results are essential to get a full understanding of the archaeology which will be impacted across the full impact zone and will inform an archaeological mitigation strategy which is reasonable, appropriate and fit for purpose.

Regarding the timing of the programme of archaeological evaluation and mitigation with respect to the DCO submission and determination, evaluation including trenching results is essential for effective risk management and to inform programme scheduling and budget management. Failing to do so could lead to unnecessary destruction of heritage assets, potential programme delays and

excessive cost increases that could otherwise be avoided. A programme of trial trenching is required to inform a robust mitigation strategy which will need to be agreed by the time the Environmental Statement is produced and submitted with the DCO application.

Regarding not undertaking sufficient evaluation now while there's time, pushing evaluation and subsequent agreement of the mitigation strategy to post consent is a high risk strategy which can easily lead to significant construction delays and escalating costs if evaluation work is pushed into the work programme, with the identification of significant archaeological impact areas which require appropriate mitigation shoehorned into existing budgets and work schedules. It is much more effective project management and risk management to use the pre-application time to undertake sufficient desk based and field evaluation (ie trenching) to inform a site specific mitigation strategy which then informs the construction programme where archaeology can be dealt with effectively like any other aspect of the work programme.

Section 6.8 Potential Mitigation Measures lists '*Indicative mitigation measures*' which includes '*Programme of archaeological evaluation and mitigation works established through consultation with the Lincolnshire County Council Archaeologist*'. Evaluation is not in itself a mitigation measure, it is the process by which the type and extent of mitigation is determined through the provision of robust baseline evidence which informs a reasonable and appropriate mitigation strategy. The suite of archaeological mitigation techniques used in the agreed strategy may include preservation in situ, excavation and archaeological topsoil strip, map and record (SMR), and all of these will need to be informed by sufficient evaluation including trenching to determine where archaeologically sensitive areas are and their full extent to inform a competent reasonable mitigation strategy.

In conclusion, the EIA will require the full suite of comprehensive desk-based research, non-intrusive surveys, and intrusive field evaluation for the full extent of proposed impact. The results should be used to minimise the impact on the historic environment through informing the project design and an appropriate programme of archaeological mitigation. The provision of sufficient baseline information to identify and assess the impact on known and potential heritage assets is required by **Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Regulation 5 (2d))**, **National Planning Statement Policy EN1 (Section 5.8)**, and the **National Planning Policy Framework**.

Sufficient information on the archaeological potential must include evidential information on the depth, extent and significance of the archaeological deposits which will be impacted by the development. The results will inform a fit for purpose mitigation strategy which will identify what measures are to be taken to minimise or adequately record the impact of the proposal on archaeological remains which must be submitted with the EIA.

This is in accordance with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 which states "***The EIA must identify, describe and assess in an appropriate manner...the direct and indirect significant impacts of the proposed development on...material assets, cultural heritage and the landscape.***" (Regulation 5 (2d))

Section 7 Access and Traffic - Council agrees that this matter should be 'scoped in' and appropriate assessments included as part of the ES.

The Scoping report for sets out standard documents to be produced to support EIA, including:

- Transport Assessment

- Travel Plan to ensure significant numbers of construction workers are encouraged to use alternative modes of transport than the private car
- CTMP
- Should also consider potential cumulative construction impacts (and where relevant operational impacts) associated with other large scale Development Consent Order scale projects including Viking Link, Heckington Fen Solar (both due to potential cable route overlaps and required work to Bicker Fen Substation), Springwell Solar, Lincolnshire Reservoir and Outer Dowsing wind farm depending on timescales of these projects.

These would be the standard documents expected with regards to transport and surface water flood risk and the Council would be able to assist the applicant's consultants should they wish to discuss the scope of these documents further.

Section 8 Noise and Vibration - Council agrees that this matter should be 'scoped in' and appropriate assessment included as part of the ES and no further comments at this stage.

Section 9 Water Resources - Council agrees that this matter should be 'scoped in' and appropriate assessment included as part of the ES including the incorporation of a Flood Risk Assessment and appropriate Drainage Strategy.

Section 10 Climate Change - Council agrees this matter should be 'scoped in' and appropriate assessments included as part of the ES.

- take into account GHG emissions associated with the full life-cycle of the development and potential sources of GHG emissions. This includes emissions associated with the production of the PV panels and other supporting equipment as well as that associated with the transportation, construction and operation of the development, including replacements that may be necessary during the lifetime of the development;
- identify the potential savings in GHG emissions associated with the operation of the development as a result of the consequent reduction in use of more carbon-emitting electricity generation methods;
- assess any increase in carbon emissions as a result of the need to transport/import food and crops from elsewhere which would have otherwise been grown on the arable farmland that would be lost or removed from production as a consequence of the development. Such an assessment would enable the full carbon gains or benefits of this proposal to be properly understood; and
- with regard to greenhouse Gas Emissions this should be directly be compared to the number of years it will take for development to be carbon neutral.

Section 11 Glint - Council agrees that this matter should be 'scoped in' and appropriate assessment included as part of the ES.

Section 12 Soils and Agricultural Land - Council agrees this matter should be 'scoped in' and appropriate assessments included as part of the ES.

- The ES and ALC assessment should clearly identify how much of the site comprises of agricultural land and identify its ALC grade and current use. The ES should identify what (if any) measures would be taken to retain the agricultural land in productive use (i.e.

sheep grazing, hay/silage production) and how this would be secured. The ES should also give consideration to the economic effects of the loss or change to the use of the agricultural land as well as a consideration of the potential carbon footprint created through the displacement or removal of this land from productive use. This needs to be properly calculated to ensure that the full carbon gains or benefits of this proposal are accurate.

- The 'alternatives' exercise needs to consider alternative site layouts and potentially a reduction in MW generating capacity in order to demonstrate avoidance or minimisation of agricultural land impacts.

In terms of minerals there is no requirement to undertake a minerals assessment for this project.

Section 13 Socioeconomic - from an economic growth perspective, the range of the topics in the scoping document appears reasonable, and we will be able to comment in further detail as the project progresses.

The Council will continue to engage with this proposal as required and therefore any further queries, please do not hesitate to get in contact.

Yours faithfully

Neil McBride

Head of Planning

Complex Land Rights

Ellie Laycock

Development Liaison Officer

UK Land and Property

Ellie.Laycock@nationalgrid.com

Tel: +44 (0)7989 208211

www.nationalgrid.com

SUBMITTED ELECTRONICALLY:
beaconfen@planninginspectorate.gov.uk

02 May 2023

Dear Sir/Madam

APPLICATION BY BEACON FEN ENERGY PARK LTD (THE APPLICANT) FOR AN ORDER GRANTING DEVELOPMENT CONSENT FOR THE BEACON FEN ENERGY PARK (THE PROPOSED DEVELOPMENT)

SCOPING CONSULTATION RESPONSE

I refer to your letter dated 20th April 2023 in relation to the above proposed application. This is a response on behalf of National Grid Electricity Transmission PLC (NGET). Having reviewed the scoping report, I would like to make the following comments regarding NGET infrastructure within or in close proximity to the current red line boundary.

NGET has high voltage electricity overhead transmission lines, underground cables and a high voltage substation within the scoping area. The overhead lines and substation forms an essential part of the electricity transmission network in England and Wales.

Substation

- Bicker Fen 400kV Substation
- Associated overhead and underground apparatus including cables

Overhead Lines

4ZM 400kV OHL

Bicker Fen – Spalding – North West Burton

Bicker Fen – Walpole – West Burton

I enclose a plan showing the location of NGET's apparatus in the scoping area.

Specific Comments – Electricity Infrastructure:

- NGET's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset
- Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. NGET recommends that no permanent structures are built directly beneath overhead lines. These distances are set out in EN 43 – 8 Technical Specification for “overhead line clearances Issue 3 (2004)”.
- If any changes in ground levels are proposed either beneath or in close proximity to our existing overhead lines then this would serve to reduce the safety clearances for such overhead lines. Safe clearances for existing overhead lines must be maintained in all circumstances.
- The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 “Avoidance of Danger from Overhead Electric Lines” and all relevant site staff should make sure that they are both aware of and understand this guidance.
- Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum “sag” and “swing” and overhead line profile (maximum “sag” and “swing”) drawings should be obtained using the contact details above.
- If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.
- Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) drawings can be obtained using the contact details above.
- NGET high voltage underground cables are protected by a Deed of Grant; Easement; Wayleave Agreement or the provisions of the New Roads and Street Works Act. These provisions provide NGET full right of access to retain, maintain, repair and inspect our assets. Hence we require that no permanent / temporary structures are to be built over our cables or within the easement strip. Any such proposals should be discussed and agreed with NGET prior to any works taking place.
- Ground levels above our cables must not be altered in any way. Any alterations to the depth of our cables will subsequently alter the rating of the circuit and can compromise the reliability, efficiency and safety of our electricity network and requires consultation with National Grid prior to any such changes in both level and construction being implemented.

To download a copy of the HSE Guidance HS(G)47, please use the following link:
<http://www.hse.gov.uk/pubns/books/hsg47.htm>

Further Advice

We would request that the potential impact of the proposed scheme on NGET's existing assets as set out above and including any proposed diversions is considered in any subsequent reports, including in the Environmental Statement, and as part of any subsequent application.

Where any diversion of apparatus may be required to facilitate a scheme, NGET is unable to give any certainty with the regard to diversions until such time as adequate conceptual design studies have been undertaken by NGET. Further information relating to this can be obtained by contacting the email address below.

Where the promoter intends to acquire land, extinguish rights, or interfere with any of NGET apparatus, protective provisions will be required in a form acceptable to it to be included within the DCO.

NGET requests to be consulted at the earliest stages to ensure that the most appropriate protective provisions are included within the DCO application to safeguard the integrity of our apparatus and to remove the requirement for objection. All consultations should be sent to the following email address: box.landandacquisitions@nationalgrid.com

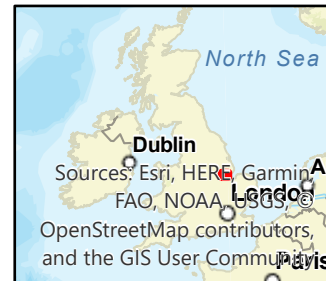
I hope the above information is useful. If you require any further information, please do not hesitate to contact me.

The information in this letter is provided notwithstanding any discussions taking place in relation to connections with electricity customer services.

Yours faithfully

E Laycock

**Ellie Laycock
Development Liaison Officer, Complex Land Rights**



Dublin
Sources: Esri, HERE, Garmin, A
FAO, NOAA, USGS, ©
OpenStreetMap contributors,
and the GIS User Community

Legend

Buried Cable

- Buried Cable
- Commissioned

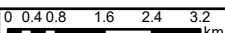
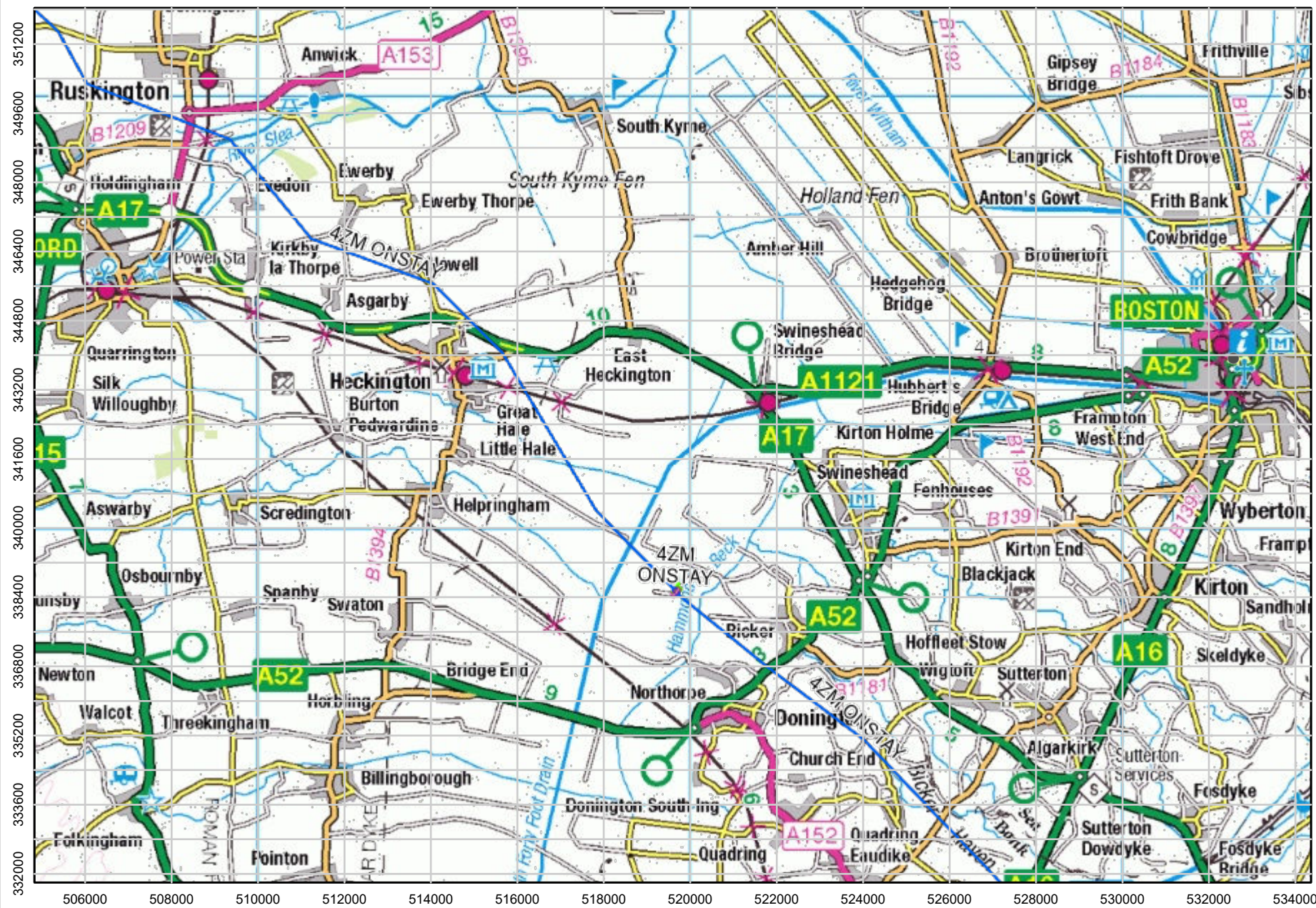
OHL 400Kv

- OHL 400Kv
- Commissioned

Substations

- Substations
- Commissioned

Notes



Date: 4/25/2023 Page size: A4 Landscape
Time: 4:43 PM Printed By: Ellie.Laycock
Scale: 1:125,000



NG Disclaimer: National Grid UK Transmission. The asset position information represented on this map is the intellectual property of National Grid PLC (Warwick Technology Park, Warwick, CV346DA) and should not be used without prior authority of National Grid.
Note: Any sketches on the map are approximate and not captured to any particular level of precision.

OS Disclaimer: Background Mapping information has been reproduced from the Ordnance Survey map by permission of Ordnance Survey on behalf of The controller of Her Majesty's Stationery Office. ©Crown Copyright Ordnance Survey National Grid Electricity Transmission (100024241) & National Gas Transmission (100024886)

From: [.Box.Assetprotection \(National Gas\)](#)
To: [Beacon Fen](#)
Subject: RE: [EXTERNAL] EN010151 - Beacon Fen Energy Park - EIA Scoping Notification and Consultation
Date: 24 April 2023 12:14:09
Attachments: [image001.png](#)
[image002.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.jpg](#)
[image003.png](#)

Good afternoon,

Thank you for your email.

Regarding planning application EN010151, there are no National Gas Transmission assets affected in this area.

If you would like to view if there are any other affected assets in this area, please raise an enquiry with www.lsbud.co.uk. Additionally, if the location or works type changes, please raise an enquiry.

Kind regards

Asset Protection Team

From: [NATS Safeguarding](#)
To: [Beacon Fen](#)
Subject: RE: EN010151 - Beacon Fen Energy Park - EIA Scoping Notification and Consultation [SG35206]
Date: 24 April 2023 14:23:08
Attachments: [~WRD0000.jpg](#)
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Our Ref: SG35206

Dear Sir/Madam

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully



NATS Safeguarding

E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk



Date: 18 May 2023
Our ref: 374521
Your ref: EN010151



Todd Brumwell
EIA Advisor
The Planning Inspectorate
BeaconFen@planninginspectorate.gov.uk

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

T 0300 060 3900

BY EMAIL ONLY

Dear Todd Brumwell

Environmental Impact Assessment Scoping consultation (Regulation 15 (4) of the EIA Regulations 2017): Secretary of State - EIA Scoping Opinion - Proposed Beacon Fen Energy Park
Location: Land surrounding Heckington and near Sleaford, Lincolnshire

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in your consultation dated 20 April 2023 which we received on 20 April 2023.

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.

A robust assessment of environmental impacts and opportunities based on relevant and up to date environmental information should be undertaken prior to a decision on whether to grant a Development Consent Order. Annex A provides Natural England's general advice on the scope of Environmental Impact Assessments (EIA). For this specific proposed development the Environmental Statement should particularly consider the following:

1. Impact of the proposed development on the following designated sites:

- Horbling Fen Site of Special Scientific Interest
- Wilsford and Rauceby Warrens Site of Special Scientific Interest
- Sunfleet Lows Site of Special Scientific Interest

The Environmental Statement would need to show any potential effects on these designations, including via impacts on foraging habitat, noise, water quality, air quality or other disturbance which may damage or destroy the interest features for which these Sites of Special Scientific Interest have been notified. Impacts would need to be considered at all stages of the proposed development i.e. construction, operation and de-commissioning. It should also detail the mitigation required to avoid any identified impacts on designated sites. The proposed development is not within any Impact Risk Zones for European Designated sites; thus we would not anticipate any adverse impacts to European designated sites, or the need for Habitats Regulations Assessment.

2. In-Combination/Cumulative impacts

The Environmental Statement should include in-combination/cumulative assessment. There are several other solar Nationally Significant Infrastructure Projects in Lincolnshire including **Heckington Fen, Mallard Pass and Gate Burton**, and we are aware of others under consideration. Due to the size of each of these individual projects, we would like to see these projects also included within the cumulative assessment, where appropriate.

3. Loss of Agricultural Land (BMV)

It is recognised that due to the nature of the solar panels a good proportion of the agricultural land affected by the development will not be permanently lost. In order to both retain the long-term potential of this land and to safeguard all soil resources as part of the overall sustainability of the whole development, it is important that the soil is able to retain as many of its many important functions and services (ecosystem services) as possible.

The following issues should be considered and included as part of the Environmental Statement (ES):

- The degree to which soils would be disturbed or damaged as part of the development
- The extent to which agricultural land would be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land would be impacted.
- The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan.
- The ES should also set out details of how any adverse impacts on soils can be avoided or minimised and demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise offsite impacts.

In order to fully assess the impacts to Best and Most Versatile land, a detailed Agricultural Land Classification (ALC) survey may be necessary. Where a detailed ALC and soil survey of the land is required, this should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres.

Further information is available in the [Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites and](#)
The British Society of Soil Science Guidance Note [Benefitting from Soil Management in Development and Construction](#).

Further guidance is also set out in the Natural England Guide to assessing development proposals on agricultural land.

4. Protected Species

The Environmental Statement should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). It should also provide details of any proposed mitigation measures required to protect these species. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area. It is noted that ground nesting birds may specifically be at risk due to the large land-take involved with the development.

5. Biodiversity Net Gain

The Environmental Statement should include a Biodiversity Net Gain Assessment and Habitat Management Plan. The Habitat Management Plan should explain how the site will continue to be managed and secured for the lifetime of the development. The Habitat Management Plan should also provide details on retention and enhancement of existing habitat features such as hedgerows, woodland and ponds. We would also particularly need details on proposed habitat connectivity to surrounding habitats which would contribute to the wider Nature Recovery Network.

6. After use

The Environmental Statement should include details of the decommissioning and after use of the site, which should include details on how this will avoid impacts to soils and ensure the agricultural land can be restored to its former condition.

7. Impact on local landscapes

The Environmental Statement should include an assessment of local landscape character through the consideration of the relevant National Character Areas (NCAs) and any local landscape character assessments. This should also include any likely in-combination/cumulative effects from other known Solar Projects in the area.

Further Information

Annex A Provides Natural England's general advice on the scope of Environmental Impact Assessments (EIA).

Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

We would be happy to comment further should the need arise but if in the meantime you have any queries, please do not hesitate to contact us.

For any queries relating to the specific advice in this letter please contact Sandra Close at sandraclose@naturalengland.org.uk. Please send any new consultations or further information on this consultation to consultations@naturalengland.org.uk

Yours sincerely

SANDRA CLOSE

**Planning and Environment Lead Adviser
East Midlands Area Delivery**

Annex A – Natural England Advice on EIA Scoping

General Principles

[Schedule 4](#) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.) resulting from the operation of the proposed development
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen
- A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects. Effects should relate to the existence of the development, the use of natural resources (in particular land, soil, water and biodiversity) and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment
- A non-technical summary of the information
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information

Further guidance is set out in Planning Practice Guidance on [environmental assessment and natural environment](#).

Cumulative and in-combination effects

The ES should fully consider the implications of the whole development proposal. This should include an assessment of all supporting infrastructure.

An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information):

- a. existing completed projects;
- b. approved but uncompleted projects;
- c. ongoing activities;
- d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Environmental data

Natural England is required to make available information it holds where requested to do so. National datasets held by Natural England are available at <http://www.naturalengland.org.uk/publications/data/default.aspx>.

Detailed information on the natural environment is available at www.magic.gov.uk.

Natural England's SSSI Impact Risk Zones are a GIS dataset which can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the [Natural England Open Data Geportal](#).

Natural England does not hold local information on local sites, local landscape character, priority habitats and species or protected species. Local environmental data should be obtained from the appropriate local bodies. This may include the local environmental records centre, the local wildlife trust, local geo-conservation group or other recording society.

Biodiversity and Geodiversity

General principles

The [National Planning Policy Framework](#) (paragraphs 174-175 and 179-182) sets out how to take account of biodiversity and geodiversity interests in planning decisions. Further guidance is set out in Planning Practice Guidance on the [natural environment](#).

The potential impact of the proposal upon sites and features of nature conservation interest and opportunities for nature recovery and biodiversity net gain should be included in the assessment.

Ecological Impact Assessment (EclA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EclA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal. [Guidelines](#) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Designated nature conservation sites

Nationally designated sites

Sites of Special Scientific Interest are protected under the Wildlife and Countryside Act 1981 and paragraph 180 of the NPPF. Further information on the SSSI and its special interest features can be found at www.magic.gov.

Natural England's SSSI Impact Risk Zones can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the [Natural England Open Data Geportal](#).

The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are interest features of the SSSI, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a site, for example by being linked hydrologically or geomorphologically.

Regionally and Locally Important Sites

The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group and protected under the NPPF (paragraph 174 and 175). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. Contact the relevant local body for further information.

Protected Species

The conservation of species protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017 is explained in Part IV and Annex A of Government Circular 06/2005 [Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System](#).

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.

The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.

Natural England has adopted [standing advice](#) for protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required.

District Level Licensing for Great Crested Newts

District level licensing (DLL) is a type of strategic mitigation licence for great crested newts (GCN) granted in certain areas at a local authority or wider scale. A [DLL scheme for GCN](#) may be in place at the location of the development site. If a DLL scheme is in place, developers can make a financial contribution to strategic, off-site habitat compensation instead of applying for a separate licence or carrying out individual detailed surveys. By demonstrating that DLL will be used, impacts on GCN can be scoped out of detailed assessment in the Environmental Statement.

Priority Habitats and Species

Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found [here](#). Natural England does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely.

Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to [download](#). Further information is also available [here](#).

An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present. The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (e.g. from previous surveys)
- Additional surveys carried out as part of this proposal
- The habitats and species present
- The status of these habitats and species (e.g. whether priority species or habitat)
- The direct and indirect effects of the development upon those habitats and species
- Full details of any mitigation or compensation measures
- Opportunities for biodiversity net gain or other environmental enhancement

Ancient Woodland, Ancient and Veteran Trees

The ES should assess the impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.

Natural England maintains the Ancient Woodland [Inventory](#) which can help identify ancient woodland. The [wood pasture and parkland inventory](#) sets out information on wood pasture and parkland.

The [ancient tree inventory](#) provides information on the location of ancient and veteran trees.

Natural England and the Forestry Commission have prepared [standing advice](#) on ancient woodland, ancient and veteran trees.

Biodiversity net gain

Paragraph 174 of the NPPF states that decisions should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. Biodiversity Net Gain is additional to statutory requirements relating to designated nature conservation sites and protected species.

The ES should use an appropriate biodiversity metric such as [Biodiversity Metric 4.0](#) together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain.

The metric should be used to:

- assess or audit the biodiversity unit value of land within the application area
- calculate the losses and gains in biodiversity unit value resulting from proposed development
- demonstrate that the required percentage biodiversity net gain will be achieved

Biodiversity Net Gain outcomes can be achieved on site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies. Opportunities for wider environmental gains should also be considered.

Landscape

Landscape and visual impacts

The environmental assessment should refer to the relevant [National Character Areas](#). Character area profiles set out descriptions of each landscape area and statements of environmental opportunity.

The ES should include a full assessment of the potential impacts of the development on local landscape character using [landscape assessment methodologies](#). We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character.

A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the methodology set out in *Guidelines for Landscape and Visual Impact Assessment 2013* ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management. For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify

the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.

To ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the [National Design Guide](#) and [National Model Design Code](#). The ES should set out the measures to be taken to ensure the development will deliver high standards of design and green infrastructure. It should also set out detail of layout alternatives, where appropriate, with a justification of the selected option in terms of landscape impact and benefit.

Heritage Landscapes

The ES should include an assessment of the impacts on any land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific, or historic interest. An up-to-date list is available at www.hmrc.gov.uk/heritage/lbsearch.htm.

Connecting People with Nature

The ES should consider potential impacts on access land, common land, public rights of way and, where appropriate, the England Coast Path and coastal access routes and coastal margin in the vicinity of the development, in line with NPPF paragraph 100. It should assess the scope to mitigate for any adverse impacts. Rights of Way Improvement Plans (ROWIP) can be used to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced. Measures to help people to better access the countryside for quiet enjoyment and opportunities to connect with nature should be considered. Such measures could include reinstating existing footpaths or the creation of new footpaths, cycleways, and bridleways. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Access to nature within the development site should also be considered, including the role that natural links have in connecting habitats and providing potential pathways for movements of species.

Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.

Soils and Agricultural Land Quality

Soils are a valuable, finite natural resource and should also be considered for the ecosystem services they provide, including for food production, water storage and flood mitigation, as a carbon store, reservoir of biodiversity and buffer against pollution. It is therefore important that the soil resources are protected and sustainably managed. Impacts from the development on soils and best and most versatile (BMV) agricultural land should be considered in line with paragraphs 174 and 175 of the NPPF. Further guidance is set out in the Natural England [Guide to assessing development proposals on agricultural land](#).

As set out in paragraph 211 of the NPPF, new sites or extensions to sites for peat extraction should not be granted planning permission.

The following issues should be considered and, where appropriate, included as part of the Environmental Statement (ES):

- The degree to which soils would be disturbed or damaged as part of the development
- The extent to which agricultural land would be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land would be impacted.

This may require a detailed Agricultural Land Classification (ALC) survey if one is not already available. For information on the availability of existing ALC information see www.magic.gov.uk.

0. Where an ALC and soil survey of the land is required, this should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. The survey data can inform suitable soil handling methods and appropriate reuse of the soil resource where required (e.g. agricultural reinstatement, habitat creation, landscaping, allotments and public open space).
1. The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan.
2. The ES should set out details of how any adverse impacts on soils can be avoided or minimised and demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise off-site impacts.

Further information is available in the [Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites and The British Society of Soil Science Guidance Note Benefitting from Soil Management in Development and Construction](#).

Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue. For example, approximately 85% of protected nature conservation sites are currently in exceedance of nitrogen levels where harm is expected (critical load) and approximately 87% of sites exceed the level of ammonia where harm is expected for lower plants (critical level of 1µg)^[1]. A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The Government's Clean Air Strategy also has a number of targets to reduce emissions including to reduce damaging deposition of reactive forms of nitrogen by 17% over England's protected priority sensitive habitats by 2030, to reduce emissions of ammonia against the 2005 baseline by 16% by 2030 and to reduce emissions of NO_x and SO₂ against a 2005 baseline of 73% and 88% respectively by 2030. Shared Nitrogen Action Plans (SNAPs) have also been identified as a tool to reduce environmental damage from air pollution.

The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly, or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or SNAPs, which may be being developed or implemented to mitigate the impacts on air quality. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Information on air pollution modelling, screening and assessment can be found on the following websites:

- SCAIL Combustion and SCAIL Agriculture - <http://www.scail.ceh.ac.uk/>

^[1] [Report: Trends Report 2020: Trends in critical load and critical level exceedances in the UK - Defra, UK](#)

- Ammonia assessment for agricultural development <https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit>
- Environment Agency Screening Tool for industrial emissions <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>
- Defra Local Air Quality Management Area Tool (Industrial Emission Screening Tool) – England <http://www.airqualityengland.co.uk/laqm>

Contribution to local environmental initiatives and priorities

The ES should consider the contribution the development could make to relevant local environmental initiatives and priorities to enhance the environmental quality of the development and deliver wider environmental gains. This should include considering proposals set out in relevant local strategies or supplementary planning documents including landscape strategies, green infrastructure strategies, tree and woodland strategies, biodiversity strategies or biodiversity opportunity areas.

Todd Brumwell
The Planning Inspectorate
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN

Telephone: 01636 650000
Email: planning@newark-sherwooddc.gov.uk

Date: 5 May 2023

Application ref: 23/00691/NPA

By email to beaconfen@planninginspectorate.gov.uk

Dear Mr Brumwell

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by Beacon Fen Energy Park Limited (the Applicant) for an Order granting Development Consent for the Beacon Fen Energy Park Scheme (the Proposed Development)

Scoping consultation

I refer to the above consultation received by this Authority on 20th April 2023.

The site, as described within the Beacon Fen Energy Park EIA Scoping Report dated April 2023 is located outside of Newark and Sherwood District. The proposed ground-mounted solar photovoltaic (PV) electricity generation and battery energy storage system ('BESS'), together with associated grid connection infrastructure, would be sited at land surrounding Heckington, near Sleaford, Lincolnshire, which is located approximately 12.0 km west of the nearest district village of Barnby in the Willow. Following a review of the EIA Scoping Report, I can confirm that Newark and Sherwood District Council has no comments to make on the information to be provided in an Environmental Statement (ES) relating to the Proposed Development.

Please note that this matter has not been formally reported to the District Council's Planning Committee. In these circumstances the comments are those of an Officer of the Council under delegated power arrangements.

Yours sincerely



Lisa Hughes
Business Manager – Planning Development

From: [Cheryl Jarvis \(EQUANS\)](#)
To: [Beacon Fen](#)
Cc: [Martin Dixon \(EQUANS\)](#)
Subject: EN010151-000008
Date: 04 May 2023 10:11:46
Attachments: [image001.jpg](#)

Good morning,

I can confirm North East Lincolnshire has no comments to make.

Kind Regards,

Cheryl Jarvis FD, MSc, MRTPI
Development Manager
Development Management - Planning
Places & Communities – NEL

Tel. +44 ([REDACTED]
Mob. +44 [REDACTED]



equans.co.uk

New Oxford House, George Street
Grimsby, North East Lincolnshire, DN31 1HB

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From: [Before You Dig](#)
To: [Beacon Fen](#)
Cc: [Before You Dig](#)
Subject: RE: EXT:EN010151 - Beacon Fen Energy Park - EIA Scoping Notification and Consultation
Date: 20 April 2023 14:31:36
Attachments: [image007.png](#)
[image008.png](#)
[image009.png](#)
[image011.png](#)
[image012.png](#)
[image013.png](#)
[image001.png](#)

Good afternoon,

NGN may have a number of gas assets in the vicinity of some of the identified “site development” locations. It is a possibility that some of these sites could be recorded as Major Accident Hazard Pipelines(MAHP), whilst other sites could contain High Pressure gas and as such there are Industry recognised restrictions associated to these installations which would effectively preclude close and certain types of development. The regulations now include “Population Density Restrictions” or limits within certain distances of some of our “HP” assets.

The gas assets mentioned above form part of the Northern Gas Networks “bulk supply” High Pressure Gas Transmission” system and are registered with the HSE as Major Accident Hazard Pipelines.

Any damage or disruption to these assets is likely to give rise to grave safety, environmental and security of supply issues.

NGN would expect you or anyone involved with the site (or any future developer) to take these restrictions into account and apply them as necessary in consultation with ourselves. We would be happy to discuss specific sites further or provide more details at your locations as necessary.

If you give specific site locations, we would be happy to provide gas maps of the area which include the locations of our assets.

(In terms of High Pressure gas pipelines, the routes of our MAHP’s have already been lodged with members of the local Council’s Planning Department)

Kind regards,

Jennie Adams

**Administration Assistant
Before You Dig
Northern Gas Networks
1st Floor, 1 Emperor Way
Doxford Park
Sunderland
SR3 3XR**

Your Ref : EN010151
Our Ref : 23/0471/NSIP
Contact : Nick Feltham
Email : n [REDACTED]

The Planning Inspectorate
Environmental Services Central Operations
Temple Quay House
2 The Square
Bristol BS1 6PN
By email only - beaconfen@planninginspectorate.gov.uk

18 May 2023

Dear Sir/Madam

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11

Application by Beacon Fen Energy Park Limited for an Order granting Development Consent for the Beacon Fen Energy Park on land to the southwest of Heckington/adjacent to Ewerby Thorpe and Thorpe Latimer, Lincolnshire.

Thank you for your consultation request under regulation 10(6) of the EIA Regulations. North Kesteven District Council, as a consultation body and host authority, wishes to make the following comments in regard to information to be provided with the Environmental Statement Scoping Report. The following comments are made, following the structure of the Environmental Impact Assessment Scoping Report undertaken by Wardell Armstrong (dated April 2023).

Background & Procedural Observations (Conflict with Advice Note Seven)

North Kesteven District Council's (NKDC) involvement to date with the proposed development has been limited to a single initial briefing on Microsoft Teams on 29th March 2023. The applicant only commenced initial (non-statutory) pre-application consultation on 15th May 2023, with the first of the 'in-person' consultation events (Heckington) being held on 18th May. The Council was advised at the March meeting of the intention to submit a Scoping Report to the Planning Inspectorate before the end of April and that separate briefings to other interested parties and consultees were being arranged in the period leading up to Scoping Report submission. The statutory consultation process is expected to be held in winter 2023.

The Council is concerned that the timescales adopted unilaterally by the applicant – culminating in this Reg. 10 and 11 Scoping Opinion request to the Inspectorate - has fundamentally undermined the degree to which the information contained in the Scoping Report could be relied upon as a robust representation of the potential significant environmental effects of the proposed development. On that basis the Council's view is that the submission of the Scoping Report is clearly premature and we would encourage the Planning Inspectorate to decline to accept it.

The Scoping Report is dated April 2023, and clearly (as acknowledged by the applicant) has been developed without prior dialogue with interested parties meaning that there has been no opportunity for the content of the Report, and more importantly the composition of the project, to have been informed through the prior engagement of those parties.

There has been no informal/non-statutory consultation, no pre-application discussions or briefings with the Council other than the single meeting referred to above and our position is that this significantly undermines the ability to provide meaningful feedback on the Scoping Report, nor for the matters relating to the scale, layout and composition of the scheme to be fully understood and considered.

Our view is that this submission does not comply with the guidance set out in Advice Note Seven 'Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements'.

Paragraph 5.8 of the advice note recommends that applicants undertake their own non-statutory consultation with the consultation bodies, or others, prior to submission of a Scoping Request to allow for refinement of options ahead of the formal request. It notes that applicants may choose to consult on preferred sites or solutions.

Paragraph 5.9 then cautions that applicants should consider carefully the best time to request a scoping opinion, and that *"in order to gain the most benefit, applicants should consider requesting the opinion once there is sufficient certainty about the design of the Proposed Development and the main design elements likely to have a significant environmental effect"*.

Continuing, it advises that applicants *"should avoid submitting requests with multiple and varied design and layout options"* however that if this cannot be avoided and options remain under consideration (for example a number of route corridors associated with a proposed linear development) *"applicants should be aware that this may affect the ability of the Planning Inspectorate and consultation bodies to provide detailed comments"*.

Finally, paragraph 5.9 notes that *"should a high level of uncertainty remain around key design elements of the Proposed Development this is likely to limit the Planning Inspectorate's ability to agree to scope out aspects/matters to enable the refinement of the ES"*.

As we set out and highlight below under specific chapter headings, other than very high-level location plans attached at Appendices 1.1 and 1.2 of the Scoping Report the Council has not (nor, we assume have any other interested parties) seen any preferred options/solutions, alternatives or design proposals of the type envisaged by advice note 7 and which are deemed essential to ensure a robust Scoping process.

Other than noting the proposed northern and southern solar array sites and the extensive cable connection corridor to Bicker Fen sub-station these drawings do not even present an indicative internal layout of the two solar array sites including for example the potential location of the battery energy storage system (paragraph 2.4.17), substation compounds (paragraph 2.4.20), the potential location of construction access/es (paragraph 2.6.1) BNG areas etc.

Paragraph 2.4.1 of the Scoping Report acknowledges that such details are not yet available as they have not yet been developed;

'The infrastructure layout within the two solar array sites has yet to be confirmed as this is to be informed by the findings of design development, onsite surveys, desktop studies and assessment process. Similarly, the location and access arrangement for the compounds required during the construction phase will also be informed by the findings. The design proposals will include enhancement and betterment in relation to biodiversity, boundary treatments, and landscaping'.

The significant uncertainty at this stage as to layout iterations, the location of key infrastructure and the significant width of the cable connection corridor to Bicker Fen (paragraph 2.5.2) mean that the Council are unable to give particularly detailed feedback and we would also anticipate that other statutory and non-statutory consultees might experience similar challenges. Mindful of this high level of uncertainty regarding design and layout options (and alternatives) we would therefore request that PINS have very careful regard to their own guidance at paragraphs 5.8 and 5.9 of the advice note, when considering whether a meaningful Scoping Opinion can be made.

Finally we would also highlight a significant procedural concern at this stage, which is also explored in more detail below, regarding the overlay of part of the Beacon Fen South site with the preferred location of the Lincolnshire Reservoir; a registered NSIP project in its own right.

Notwithstanding our procedural concerns we can provide the following feedback.

Section 1.4 Legislative and Planning Policy Overview

Paragraph 1.4.4 states that 'In lieu of an adopted technology specific NPS for solar PV, this Scoping Report has been prepared taking account of the NPSs that currently have effect, namely the adopted Overarching NPS for Energy (EN-1) and the adopted NPS EN-5. A summary of the relevant considerations for each technical assessment is provided for each environmental aspect (i.e., Sections 4 – 13)'.

The Council's view, and experience from other Scoping Reports submitted for solar arrays in the District is that draft NPS's EN-1, 3 and 5 (2021 and 2023 versions) could and should have been used to inform the content of the ES given that these are clear indications of emerging guidance.

Paragraph 1.4.6 incorrectly refers to the 2017 Central Lincolnshire Local Plan. This has since been replaced by the 2023 version adopted on 13th April 2023.

Section 2 Proposed Development

Paragraph 2.4.7 notes that the modules would be angled towards the south at a slope of 10° to 45° from horizontal. Relevant chapters (e.g. glint and glare and LVIA) should ensure that this range is considered where applicable in the assessment of effects. Similarly the potential use of indoor (i.e. enclosed) equipment storage and transformers should be considered in the context of LVIA in particular.

Paragraph 2.7.3 states that ‘Once operational, the Proposed Development will have an operational life of approximately 60 years. During this timeframe, the condition of equipment will be reviewed at the end of design life to determine whether it remains in a viable condition to continue operation after that time’.

A 60-year timeframe is significantly longer than the 40-year operational life typically associated with NSIP-scale solar farms from our experience elsewhere and the applicant should justify this. Paragraph 3.10.140 of the March 2023 draft National Policy Statement for Renewable Energy Infrastructure (EN-3) states that ‘an upper limit of 40 years is typical, although applicants may seek consent without a time period or for differing time-periods for operation’. The proposed 60 year timeframe in the Council’s view represents a development of a more permanent character and should accordingly be assessed on the degree of permanence as opposed to any claimed temporary period.

2.8 Alternatives Considered

Paragraph 2.8.3 limits the consideration of alternatives considered to the “Do Nothing” option, alternative design/layout, and an alternative cable route corridor (to be informed by the EIA process and feedback from consultation). This is not sufficient and wholly inadequate.

There is no specific reference to alternative sites, nor the degree to which the various environmental or other constraints will be factored into the search parameters in order to identify and potentially rule out (with evidence) what those alternatives are.

It is accepted that the grid connection option is a key locational factor for solar farms and it is noted that the applicant has secured in principle a connection into Bicker Fen substation. By way of reference, the search area proposed by the Council in relation to Heckington Fen Solar Park was county-level (in the context of NSIP-scaled solar farms registered with PINS in the West Lindsey/Bassetlaw and South Kesteven/Rutland districts) and in consideration of the grid connection options associated with those schemes.

In the context of the potential impacts on BMV land (see below) the Council’s view is that the approach to considering alternative sites should initially start with the applicant evidencing the offer of a grid connection into Bicker Fen substation and then assessing suitable alternative sites within a radial distance of Bicker Fen. The Planning Inspectorate applied an ‘alternatives’ search area of 9km to the Heckington Fen Solar Park reflective of the length of the cable connection corridor from the site into Bicker Fen substation. The Council’s view is that a similar approach should be applied here but using Beacon Fen North (the furthest parcel from Bicker) as the relevant distance.

This being said, it is evident from other solar proposals that there are and range of variable connection distances being considered and so 9kms should not be regarded as a maximum ergo the area of search for alternative sites/locations should not necessarily be limited by a presumed cable connection distance.

The alternatives assessment should have regard to environmental constraints including BMV land impacts and should not focus solely on land that is 'not BMV', but rather also areas that comprise lesser proportions of BMV.

In terms of the 'site specific' consideration of alternatives we consider that the exercise also needs to consider alternative site layouts within Beacon Fen North and South including potentially a reduction in MW generating capacity aligned with location of the respective Agricultural Land Classification Grades in order to demonstrate avoidance or minimisation of agricultural land impacts. A key consideration for Beacon Fen South will be the assessment of alternative site layouts to avoid or minimise conflict with the proposed Lincolnshire Reservoir – see below.

As currently proposed we do not consider that the applicants assessment of alternatives is sufficient, indeed it is contend that such reasonable assessment is wholly absent.

Section 3 EIA Approach and Topic Areas

It is assumed that the reference to intra-cumulative (effect interactions) in paragraph 3.2.17 includes interactions across the multiple environmental impacts from both Beacon Fen North and South considered individually and collectively. Whilst the respective separation distances mean that intra-cumulative effects across North/South might be limited, nevertheless they should be identified where applicable.

Paragraph 3.2.21 states that the proposed ZOI will comprise a 5km distance out from the red line presented at Appendix 1.1 (and at PEIR and DCO application stage, 5km from the draft Order Limits) and that this aligns with or exceeds the study area for the majority of environmental assessments. The report states that the assessment of inter-cumulative effects will be undertaken with regard to PINS Advice Note Seventeen: 'Cumulative effects assessment relevant to nationally significant infrastructure projects'.

However the use of a suggested 'blanket' ZOI is not supported by the Council in each case. For the avoidance of doubt the Council suggests that cumulative effects associated with BMV agricultural land impacts (i.e. in relation to 'soils and agricultural land') should as a minimum include all of the NSIP solar projects in Lincolnshire at Heckington Fen, Springwell Solar Farm, Tillbridge, Temple Oaks, Cottam, West Burton, Gate Burton and Mallard Pass along with BMV agricultural land impacts associated with the Lincolnshire Reservoir (see also below). We reserve the right to highlight other projects as and when these become known and can advise how these might be treated with reference to Table 2 of Advice Note Seventeen 'Cumulative effects assessment relevant to nationally significant infrastructure projects'.

In this regard proposals for a further NSIP-scaled solar farm have recently been announced for the Fosse Green site (see fossegreenenergy.co.uk) on agricultural land 9 kilometres (5.6 miles) south west of Lincoln near Witham St Hughs. However, there is significant separation between the sites and therefore cumulative effects might be limited to agricultural land considerations depending on ALC surveying.

It is somewhat surprising and disappointing that the Scoping Report does not even acknowledge the Heckington Fen Solar Park given its relative proximity to the east of Beacon Fen North, which is well-advanced as an NSIP project and which has recently been accepted for Examination.

Indeed there is no reference to or acknowledgement of any potential cumulative impacts associated with other NSIP scale solar projects in the District/Lincolnshire, or other nearby projects with potential inter-cumulative effects such as Triton Knoll and Viking Link.

In addition to assessing cumulative BMV impacts across the registered Lincolnshire NSIP schemes and Lincolnshire Reservoir, Beacon Fen North in particular should consider as a minimum cumulative LVIA, highways and transport, air quality (construction), historic environment, ecological and potentially residential visual amenity impacts with Heckington Fen, and highways and transport and air quality (construction) impacts associated with Springwell Solar Park. Cumulative highways and transport impacts associated with Beacon Fen South, Springwell and Heckington Fen might also be applicable depending on likely construction routeing.

The proposed cable connection route should as a minimum consider cumulative effects associated with Heckington Fen, Temple Oaks, Viking Link and Triton Knoll.

4 Landscape and Visual

We would refer the applicant to the jointly-procured detailed feedback provided by AAH on behalf of Lincolnshire County Council and North Kesteven District Council contained in Appendix 1, 'Technical Memorandum 1: AAH TM01'.

At this initial stage of the NSIP process, AAH consider the content and level of information provided by the applicant within Chapter 4 (Landscape and Visual), and Figures 4.1 to 4.5, to be generally satisfactory, however comment that the 16 proposed viewpoint locations noted in Figures 4.1 and 4.3 should be supplemented by additional ones from further distances in all directions.

AAH also raise concern that at present only 4 of the 16 viewpoints are proposed to be developed as photomontages, however the justification for the selection is unclear. Viewpoints 9 and 10 have close proximity, whilst the others are spread with a bias to the northwest of the sites. There are currently no proposed photomontages to the southeast of the sites.

The scope of the study area is considered to be appropriate however as above additional viewpoints need to be identified in all directions to consider the impacts of longer range views. As suggested by AAH, the Council would be happy to jointly agree additional viewpoints in due course in order to address AAH's comments.

We also note that the Scoping Report does not reference Residential Visual Amenity. Whilst the Beacon Fen North and South sites are located away from larger centres of population nevertheless there are a number of isolated properties, villages and hamlets containing groups of residential properties whose residential 'visual' amenities might be impacted by development, depending on evolving site layout option/s.

The Council therefore considers that the ES should contain a Residential Visual Amenity Assessment (RVAA) compiled with reference to Technical Guidance Note 02/19 'Residential Visual Amenity Assessment'.

The RVAA should not focus solely on individual or groups of properties however should consider the magnitude of change to residential amenity on a 'settlement scale' basis taking account not only of fixed address points but also the experiences of residents of those settlements when travelling into and around those areas. This should include (for Beacon Fen North) the settlements of Howell and Ewerby Thorpe, Westmorelands, Asgarby Barns and Howell Fen Farmhouse on Howell Fen Drove (which appear to be outside the DCO boundary) and the properties on Waithe Lane/Ewerby Fen to the north west of the site, along with Gashes Barn which is located within the broader site boundary but appears to be in separate/private ownership.

For Beacon Fen South this should include properties along the B1394 at Thorpe Latimer, Bramble Cottage, Screddington Road and properties on Screddington Road between Helpringham and Screddington, and properties on South Drove/South Fen Road south of Helpringham.

Finally, and as outlined elsewhere in this response, the Scoping Report does not acknowledge the Lincolnshire Reservoir and therefore (without prejudice) the degree to which the 'future baseline' will change around the Beacon Fen South site in the event that the reservoir secures a DCO. The LVIA ZTV and RVAA will need to account for this and cannot therefore presume that the existing (present day) baseline environment will remain unaltered.

5 Ecology

Please find attached detailed comments from the Council's consultant ecologist, AECOM (Appendix 2). In summary;

- Very little information has been provided in Chapter 5 on the baseline habitat conditions on site, and a habitat map has not been provided
- The impacts and effects of the proposed large scale habitat change could be significant for the species reliant on arable habitats and associated cultivation regimes (certain breeding and wintering birds, and scarce arable flora)
- Known stands of ancient woodland (irreplaceable habitat) have been identified based on the Ancient Woodland Inventory (AWI). The AWI is not definitive and generally omits woodlands smaller than 2ha. Therefore, the applicant should ensure that all woodlands in the zone of influence have been suitably assessed to demonstrate the absence of potential ancient woodland

- The scope for further survey work is focussed on species and it is not clear what habitat surveys have been completed so far (with the exception of a Phase 1 habitat survey) and what follow-up habitat surveys are proposed or completed. Woodland, hedgerow and ditch habitat surveys are likely to be required along with Site Condition Assessment of habitats for Biodiversity Net Gain (BNG) purposes.

With reference to Badger, and the absence of detailed survey information and an understanding of main sett locations, we cannot yet agree that surveys should be restricted to within 50m of the site boundary.

Opportunities to link or extend existing habitats of higher biodiversity value should be explored (particularly within Strategic Green Corridors and Biodiversity Opportunity Areas), with a potential focus on woodland and scrub, meadow, pond and wetland habitats

Paragraph 5.5.2 of the Scoping Report states that some pruning of mature trees at the edge of woodland blocks and within hedgerows may be necessary (e.g. to prevent overshadowing) and the woodland edge and trees in hedgerows will be assessed. The ES should be accompanied by tree survey and constraints plan of all green infrastructure likely to be impacted by development, undertaken to BS5837 standards.

Paragraph 5.5.2 also confirms that where mitigation or enhancement is required, including to deliver biodiversity net gain (BNG), the land for this will be within the Site. Paragraph 3.10.119 of the 2023 draft EN-3 confirms that solar proposals should aim to achieve environmental and biodiversity net gain in line with the ambition set out in the Environmental Improvement Plan and any relevant measures and targets, 'including statutory targets set under the Environment Act or elsewhere'. The applicant should therefore proceed on the basis that a minimum BNG of 10% is required although it is anticipated that development of this scale will be able to deliver considerably in excess of this. Reference to 'the Site' should clarify whether freestanding, minimum 10% BNG will be delivered in both Beacon Fen North and South, rather than focussing all BNG onto one site. Justification for the approach should be set out.

Paragraph 5.5.3 notes that limitations applicable to the scoping process include that 'baseline surveys are ongoing and those surveys undertaken after Scoping may find the presence of new significant ecological features that could be affected by the Proposed Development'. The Council advises that as no pre-application engagement has been carried out with us prior to the applicant commencing survey work then we reserve the right to request re-survey or additional survey works as necessary.

Paragraph 5.6.5 suggests that 'The impacts on ecological features of decommissioning the scheme are likely to be the same as those during construction'. This is not necessarily the case. Either the 'Land, Soils and Groundwater' or the 'Ecology and Biodiversity' chapter of the ES should also consider the interplay between agricultural and ecological/BNG impacts – and therefore the degree to which effects are temporary/reversible.

There is evidence that organic matter builds up in biodiversity areas at a faster rate than arable farmland and this may benefit the land, but it is not a factor in the assessment of ALC. Long term, where biodiverse land becomes ecologically important there is the possibility of land becoming assigned with environmental designations, such as SSSI status, though generally this has not so far occurred on other solar sites.

If land remains uncultivated for longer than five years, then permission may be required from Natural England to bring the land back into arable cultivation.

Any material enhancement in the botanical diversity of the site (to the extent that the application site may then be considered to be of ecological value), will limit the capacity for the land to be returned to arable use after the solar farm has been decommissioned and therefore it does not follow that reverting the land back to agriculture will simply have the same ecological impacts as at construction stage.

The EIA (Agriculture) (England) (No.2) Regulations 2006 prohibit the physical or chemical cultivation of what are considered to be 'semi-natural areas'. 'Cultivation' is not clearly defined and does not necessarily require land to have been ploughed and therefore there is a possibility that areas of environmentally 'enhanced' land within the site may not be permitted to return to arable farmland after the 60 year period.

Paragraph 5.7.21 states that potential cumulative impacts (intra and / or inter-cumulative, as appropriate) will be identified and considered as part of the assessment. Cumulative ecological impacts between Beacon Fen North and Heckington Fen Solar Park should be considered.

Paragraph 5.8.4 notes that Natural England's National Character Area profiles or Local Nature Recovery Strategy will be referenced by way of identifying habitat restoration or creation schemes. The applicant is advised that Local Ecological Network, Biodiversity Opportunity and Green Infrastructure Mapping, along with the Local Nature Recovery Strategy has been prepared for Central Lincolnshire by the Greater Lincolnshire Nature Partnership. These maps and strategies identify the known existing areas of high biodiversity value and areas of local biodiversity priority where it is considered most important and feasible to target habitat creation, extension and restoration. The applicant should refer to these in the formulation of BNG proposals.

6 Cultural Heritage

With reference to paragraph 6.2.1 we would suggest that the minimum study area of 5km is adopted for both designated and non-designated heritage assets. We agree that some flexibility is required and that the study area could in principle be reduced within the cable route corridor once the size and location of the corridor becomes more refined.

Paragraphs 6.4.8, 6.4.10 and 6.4.12 refer to non-designated heritage assets across the three study areas as taken from the Lincolnshire Historic Environment Record (HER). However, the HER does not directly correlate with NDHA designation and it is likely that many of the examples referred to would not qualify as an NDHA in their own right by reference to NPPF and Historic England definition and guidance. The Council does not generally consider areas of archaeological interest to be 'non-designated heritage assets' as defined. There is no reference to the adopted NKDC [Local List of Non-Designated Heritage Assets | North Kesteven District Council \(n-kesteven.gov.uk\)](https://www.n-kesteven.gov.uk/local-list-of-non-designated-heritage-assets) and criteria for identification. The ES chapter should incorporate details of the proactive identification and assessment of NDHAs in the study area using adopted Council guidance.

Paragraphs 6.7.3, 6.7.5 and 6.7.7 reference subsequent discussion and agreement of work programmes with heritage professionals, and which needs to include the Heritage Trust of Lincolnshire on behalf of the Council, on archaeological matters.

Table 6.7.3 references criteria for assessing the value of heritage assets. It differentiates between 'conservation areas' and 'conservation areas of demonstratable high value'. However, there is no such differentiation in the Planning (Listed Buildings and Conservation Areas) Act 1990 nor in the appraisals and management plans adopted by the Council and there is no reference in the scoping report as to how this will be applied. As such we favour that all conservation areas are placed in the 'high' asset value category.

The closest Conservation Areas to the site are at Helpringham and Heckington. Whilst there is no Conservation Area appraisal for Helpringham there is a high level character summary contained at Appendix 9 of the archived 2007 NKDC Local Plan which whilst prepared some time ago still serves as a source of information. Heckington has a Conservation Area appraisal dated 2016. Whilst not an exhaustive list, with reference to paragraph 6.2.1, from a recent site visit there are views of the Grade I listed Kyme Tower across parts of Beacon Fen North and the Grade II* former Bass Maltings (Sleaford) across parts of Beacon Fen South that should be assessed.

Please find attached (Appendix 3) detailed comments from the Heritage Trust of Lincolnshire (HTL), the Council's consultant archaeologist. In summary HTL comment that the archaeological elements of the Scoping Report are vague on a number of matters, including trial trenching as part of the baseline, it lacks detail (such as methodology) and makes assumptions (de-scoping) but without an evidence base.

HTL comment that the Desk Based Assessment (DBA) should include desk based information for the full extent of all proposed impact areas including the cable or connector routes. The full suite of desk-based information needs to be assessed to inform the baseline and should include LiDAR and aerial photo coverage and assessment.

Geophysical surveys are required across all areas of potential impact. At present there is insufficient information on the presence, character, date and significance of any archaeological deposits. The results of the full DBA including the aerial photographic and Lidar assessments together with the results of the geophysical survey will inform the programme of trial trench evaluation required. Unless and until the DBA and trial trench evaluation confirm otherwise, the Council will not support any of these studies and assessments being secured by Requirement/s in lieu of the being presented with the DCO application.

Reference should also be made to planning and specialist cultural heritage and archaeological guidance and standards and should include the Lincolnshire County Council Archaeology Handbook (2019) which sets out requirements for work in the County, including archiving and deposition.

7 Access and Traffic

Table 7.1 does not reference count data for the A52. It is assumed that the A52 will be used for component and construction related trips associated with Beacon Fen South. Similarly paragraph 7.7.9 confirms that Automatic Traffic Count (ATC) surveys will be undertaken on links comprising the construction traffic routes within the study area and unless otherwise agreed with the Highway Authority this should also include the A52.

We agree with paragraph 7.6.2 that operational traffic impacts can be scoped out however the ES should still provide estimates of the trip numbers associated with component replacement and renewal during the operational lifetime.

Solar panels and components will potentially arrive via east coast ports and therefore the ES should also factor in construction vehicle impacts along the A17 corridor unless otherwise scoped out in consultation with the Highway Authority.

Paragraph 7.7.21 references cumulative considerations which should include cumulative construction (and where relevant operational) effects associated as a minimum with Triton Knoll, Viking Link, Heckington Fen solar (including works to Bicker Fen Substation), Springwell solar, Temple Oaks solar and the Lincolnshire Reservoir depending on the timeframes of those projects.

TCPA (1990) projects requiring cumulative assessment of transport effects include the Sleaford West and potentially the Sleaford South SUEs (A17/A15 corridor).

There is a network of public rights of way (PRoW) around the sites although Beacon Fen North is limited only to Bridleway Ewer/1103/1 to the south of Ewerby Thorpe and which appears to be located outside the proposed DCO boundary. The cable corridor however contains a large number of PROWs and there are a number of PROWs within or adjacent to Beacon Fen South. Opportunities to create new and expanded routes that would improve access and links between settlements should be considered with potential additional public footpaths and bridleways created as part of the development.

Any such routes should not utilise routes used for construction or maintenance activities and be a minimum width of 4m for public footpaths and 5m for public bridleways. Any fencing alongside a public path should be open mesh construction and not close board timber fencing or metal palisade to avoid the creation of a narrow claustrophobic environment.

Any new routes to be created should look to be formally adopted as part of the Definitive Rights of Way network rather than permissive routes which could potentially be removed at any point during the life of the project. If permissive routes are proposed then details should be provided of the mechanisms to be adopted to ensure these remain in place for the duration and life of the development.

8 Noise and Vibration

Paragraph 8.2.2 states that for the purpose of Scoping, the study area comprises the area of the Site and an area extending up to 300m from the Site boundary, which is normally sufficient to encompass nearby existing sensitive receptors. This is referenced again at paragraph 8.7.6.

The Scoping Report for the Springwell solar farm did not specify a study area whereas for Heckington Fen noise-sensitive locations were recommended for consideration within a region of approximately 250m from the boundary of the solar development areas and 1km from the proposed on-site substation/energy storage area. Along the cable connection route, dwellings within a 500m distance of particularly noisy works and any additional plant proposed at the Bicker Fen substation were recommended for consideration.

Without prejudice to ongoing discussion and agreement with the applicant, a blanket 300m study area therefore may not be sufficient. Paragraph 8.4.1 references baseline noise sources at Beacon Fen North however this is likely to also include some aircraft noise associated with nearby RAF operations. This may also apply to Beacon Fen South. Paragraph 8.4.2 references the A17 but not the A52 although it is noted that there is greater separation to the A52.

Paragraph 8.4.3 references future refinement of the cable corridor route and the need to agree baseline and monitoring locations, which is accepted, however it is unclear what is meant by 'short measurements'. As above there are probable cumulative construction noise impacts associated with the cable route; at least within parts of the identified corridor, which must be factored in temporally and geographically. We agree that baseline noise for the cable route area cannot yet be defined (table 8.2) however for the avoidance of doubt the ES must consider construction effects associated with the cable corridor (i.e. scoped in).

Paragraph 8.7.1 states that a minimum of 8 monitoring locations will be surveyed, and references Figures 8.1 and 8.2 'Noise Monitoring Locations'. The Council will advise on the suitability of these locations however at this stage in the absence of any indicative layouts, including the scale, nature and location of the most noise generating infrastructure these locations are liable to change.

The baseline monitoring approach adopted at Heckington Fen included reference to Professional Practice Guidance on Planning and Noise (ProPG, Association of Noise Consultants, Institute of Acoustics, Chartered Institute of Environmental Health, 2017)', BS 5228 Parts 1 and 2 (British Standard Institute, 2009, amended 2014) and BS 4142 (British Standard Institute, 2014 amended 2019).

Paragraph 8.7.2 states that monitoring will be undertaken in the form of long-term noise measurements, typically of 1-week duration, in order to quantify the existing noise environment and sources of noise impacting the assessment receptors. The Council wishes to agree both the location and timing of background noise monitoring locations to take account of issues such as the seasonality of land use (harvest), traffic peaks/school holidays (road traffic noise) and whether there are any concentrations of airspace use for example by RAF Cranwell and Coningsby.

It is unclear why paragraph 8.7.7 only proposes night-time assessment of all energy storage and solar components in operation during the early morning hours (05:00 – 07:00) from March to September, and night-time (23:00 – 07:00 hours) assessment of energy storage components in operation year-round. Unless otherwise agreed or justified, the night-time assessment should include all energy storage and solar components in operation all year round and through the entire night-time period.

Finally, the Scoping Report suggests that tracking panels will not be used. If this changes then the noise and vibration chapter will need to consider operational noise associated with motors, plant and equipment associated with the pivoting and rotation of panels and cumulative noise impacts may then need to be assessed stemming from the creation of variable 'corridors' down which noise could pass depending on the alignment of panels at different times of the day. This should also account for the operational noise generated by substations, inverters and other noise-emitting plant and equipment relative to those corridors and the off-site sensitive receptor locations.

9 Water Resources

Paragraph 9.4.18 states that over half of Beacon Fen North is shown to be within Flood Zone 3 and that parts of Beacon Fen South are also at risk. However there is no reference in chapter 9 for the need to apply the flood risk sequential test; the focus is on design in flood risk resilience and mitigation measures including maintaining a minimum 10m standoff distance between any built development and watercourses (paragraph 9.5.2). Paragraph 9.8.3, whilst confirming that a Flood Risk Assessment will be prepared and included as a standalone report within the Technical Appendices of the ES, does not commit to that document (or the ES chapter) addressing the requirements of the flood risk sequential test.

Paragraph 5.8.7 of the March 2023 consultation draft EN-1 'Overarching National Policy Statement for Energy (EN-1) state that "Where new energy infrastructure is, exceptionally, necessary in flood risk areas (for example where there are no reasonably available sites in areas at lower risk), policy aims to make it safe for its lifetime without increasing flood risk elsewhere and, where possible, by reducing flood risk overall. It should also be designed and constructed to remain operational in times of flood".

Paragraph 5.8.9 of draft EN-1 confirms the need for the flood risk sequential test to be applied, noting that "If, following application of the Sequential Test, it is not possible, (taking into account wider sustainable development objectives), for the project to be located in areas of lower flood risk the Exception Test can be applied, as required by Annex 3 of the Planning Practice Guidance".

The applicant should prepare sequential test evidence with reference to the guidance contained in the NPPG (Paragraph: 033 Reference ID: 7-033-20140306). The NPPF Annex 3 'Table 2: Flood risk vulnerability classification' notes that solar farms are essential infrastructure and where the associated compatibility table confirms that the exception test is required (flood zone 3(a)). The following text then states that "This table does not show the application of the Sequential Test which should be applied first to guide development to the lowest flood risk areas; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea".

On the above basis it is not sufficient for the applicant to solely address mitigation of flood risk as suggested in paragraph 9.4.18 without first applying the sequential test. The Council's view is that unless otherwise specified or advised by the Environment Agency the starting point for the flood risk sequential test search area should be the same as applied in relation to the BMV land 'alternatives' search area discussed below; namely county-wide.

We acknowledge however that grid connection is a key locational factor and therefore the search area should be refined further to consider connection requirements to the 400KV circuit and whether there are alternative options to other sub-stations and where those sites are not constrained by flood risk. This is notwithstanding that a connection offer has been made for BFSS. For instance we are aware that other NSIPs being proposed in Lincolnshire are proposing to connect into the 400kv circuit at Ryhall (Rutland/SKDC) and Cottam (WLDC schemes) and where we understand that Spalding may have future capacity albeit slightly later than BFSS.

NSIP proposals elsewhere in the County (Temple Oaks and Tillbridge) are proposing grid connection distances of around 15km - 16km and which is therefore presumed financially viable in principle. Our view therefore is that the 'alternatives' search area for sequential test purposes should initially comprise land within the County of Lincolnshire of at least 15km radius from the NG substations at Bicker, Spalding, Cottam and Ryhall.

If connection capacity/timescales mean that a connection to Cottam or Ryhall cannot be achieved in accordance with the guidance on 'alternatives' in the EN-1 statement (adopted and draft) – ideally through supporting correspondence from the National Grid - then the search area could potentially be drawn back to BFSS and Spalding; but with the same 15km radius parameter. We would also refer the Planning Inspectorate to any advice offered by the Environment Agency in relation to flood risk sequential test parameters.

10 Climate Change

The Council requests that GHG emissions should also account for the replacement of panels and any other operational/infrastructure elements during the lifetime of operation, and the applicant should also address 'alternatives' in the context of GHG offset to reflect revised layouts or overall energy generation capacity in relation to BMV land considerations (see below). This must include manufacture, shipping etc.

The approach to the assessment should consider the full life-cycle of the proposed development and potential sources of GHG emissions. GHG emissions offset through the production of lower carbon electricity compared to grid average emissions during the operational phase should also be accounted for within the GHG emissions calculations.

The ES should incorporate sufficient detail on emissions calculations (estimated and actual) to cover pre-construction, construction phase, life time (including operational and maintenance) and decommissioning. Ideally this should include the expected payback period for all estimated emissions and ensure ongoing emissions are calculated during the lifetime of the proposal (est. 60 years).

The Council also requests consideration of methods to increase in-situ carbon sequestration from effectively leaving the land fallow for the expected 60 years (in the absence of any details of agricultural land impact 'mitigation' at this stage). This could include low growing plants as part of a BNG strategy that could assist with increasing the organic content of the soil and locking carbon.

Paragraph 10.6.3 refers to the proposed development potentially being affected by the impact of climate change, including increased risk of such extreme weather events however it does not specifically cross reference fluvial flood risk in particular to Beacon Fen North and the need for specific mitigation measures (subject to also complying with the sequential test).

In principle the Council supports the mitigation measures proposed in section 10.8); the investigation of agrivoltaics would be encouraged, along with plant optimisation techniques and SUDS.

11 Glint

Paragraph 11.2.1 states that any airfields within 15km will be considered in the initial appraisal and that this study area is consistent with standard practice and hard limits within the modelling software. However, this should be clarified and agreed with the relevant aviation and defence consultees as necessary.

Paragraph 11.2.1 (assumed to be a numbering error) also states that for the purpose of the assessment, the baseline is considered to be a 'zero baseline' and that the solar farm will be considered in isolation. However as set out elsewhere the scoping report does not account for the partial site overlap of Beacon Fen South with the Lincolnshire Reservoir. Future cumulative effects of glint and glare from the reservoir surface might therefore be applicable.

12 Soils and Agricultural Land

As an initial comment, we would highlight that paragraph 3.10.14 of the March 2023 consultation draft 'National Policy Statement for Renewable Energy Infrastructure (EN-3)' states that 'Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land (avoiding the use of "Best and Most Versatile" agricultural land where possible)'.

Table 12.1 suggests that just under 30% by area of Beacon Fen North is subject to BMV Grade 3a soils and that just under 16% of Beacon Fen South is subject to a combination of BMV Grade 2 and 3a soils. Paragraph 12.4.1 states that 'whilst no design assumptions are made, the following outlines embedded mitigation measure in relation to soils and agricultural land', with the subsequent paragraph referring to the good practice guide for handling soils. However, there is no reference to avoidance of effects and alternatives; including therefore the scope to avoid the use of BMV land through scheme design and where necessary modification of the DCO boundary. This should be justified in the ES.

Paragraph 12.6.1 confirms that 'reconnaissance scale' (i.e., 1 point per 5 ha) ALC surveys were undertaken at both Beacon Fen North and Beacon Fen South in 2022 by Land Research Associates (LRA), with paragraph 12.7.1 then stating that a site-specific Soil Management Plan will be prepared based upon the findings of the reconnaissance reports. There is no reference in the chapter to the undertaking of more detailed soil augering and there is a reliance on the use of high level data contained in the LRA document.

The Council disagrees with this approach and highlights the February 2021 Natural England 'Guide to assessing development proposals on agricultural land' document which requires augering every hectare on a regular grid on agricultural land in the proposed development area. This will then allow more certainty and reliability of the data contained in table 12.1 which is only based on the 'reconnaissance scale' analysis.

Comments from the Council's Agricultural Consultant, Landscape, are attached as Appendix 4. These comments highlight that on a site of this cumulative size the amount of augering should be around 1,000 auger holes and probably 6 or 8 pits to verify the soil profiles; more if there are significantly different soils.

Landscape also advise that where ALC survey work has identified differences from published data, particularly the provisional ALC maps and the predicted Best and Most Versatile status, those area of difference should be considered as a priority and given particularly detailed consideration and evidence as to why 'discrepancies' exist.

Landscape note that the Beccles 3 (711t), Ruskington (512c), Ragdale (712g) and Wallasea 2 (813g) association soils are all at risk of compaction, structural damage and where general condition relies heavily on land drainage. These can all be affected during the construction process and the environmental assessment and Soils Management Plan should consider this aspect.

With reference to table 12.5, we are unable to access the 2022 IEMA guidance 'A New Perspective on Land and Soil in Environmental Impact Assessment', however note that the 'high', 'medium' and 'low' categories all focus on permanent, irreversible loss of one or more soil functions or soil volumes, including effects from 'temporary developments'. Temporary development is not defined and the Council considers that this categorisation might underplay the impacts from loss of opportunity to continue farming of BMV land in greater quantities than the 20ha figure referred to in the 'high' category. This is particularly the case given that a 60-year consent is sought.

With reference to paragraph 12.6.4 potential cumulative impacts on BMV land should include the other Lincolnshire solar energy NSIP schemes referred to elsewhere in this response.

Without prejudice to the ALC survey the Council's view is that there is undoubtedly a large proportion of BMV land in this vicinity and only a full ALC will identify where it is and what the Grade and quality is. Laboratory analysis of representative samples should be used to determine textures.

Either the Soils and Agricultural Land' or the 'Ecology and Biodiversity' chapter of the ES should also consider the interplay between agricultural and ecological/BNG impacts – and therefore the degree to which effects are temporary/reversible.

There is evidence that organic matter builds up in biodiversity areas at a faster rate than arable farmland and this may benefit the land, but it is not a factor in the assessment of ALC. Long term, where biodiverse land becomes ecologically important there is the possibility of land becoming assigned with environmental designations, such as SSSI status, though generally this has not so far occurred on other solar sites. If land remains uncultivated for longer than five years, then permission may be required from Natural England to bring the land back into arable cultivation.

Any material enhancement in the botanical diversity of the sward (to the extent that the application site may then be considered to be of ecological value), will limit the capacity for the land to be returned to arable use after the solar farm has been decommissioned. The EIA (Agriculture) (England) (No.2) Regulations 2006 prohibit the physical or chemical cultivation of what are considered to be 'semi-natural areas'. 'Cultivation' is not clearly defined and does not necessarily require land to have been ploughed and therefore there is a possibility that areas of environmentally 'enhanced' land within the site may not be permitted to return to arable farmland after the 60 year period.

As referred to above, the 'alternatives' exercise also needs to consider alternative site layouts and potentially a reduction in MW generating capacity aligned with location of the respective ALC Grades once a more detailed ALC report has been analysed, in order to demonstrate avoidance or minimisation of agricultural land impacts as recommended in paragraph 3.10.14 of the March 2023 draft EN-3.

As a general comment there is no reference to the avoidance of BMV land in the scheme's approach to additional (secondary and tertiary) mitigation. This is in conflict with the above draft EN-3 document and there is no commitment to minimising or avoiding effects through ongoing review of the scheme layout.

There is also limited reference in the Scoping Report as to whether and how agricultural land use continuance across the site is to be delivered alongside the operation of the solar farm. Table 12.2 refers to 'operational effects' comprising a change in agricultural production from arable to (potentially) grazing. This should be addressed in the ES chapter and should include;

- Acknowledging the proposed change from primarily arable farming to solar
- Whether any pastoral farming (for example sheep grazing) is proposed within the site, and if so where and how this is to be secured. This should include;
- identifying whether contracts are in place for pastoral farming;
- whether those contracts span the operational duration of the scheme (60 years minimum);
- whether and how the applicant considers that such contractual obligations, and more broadly, a change from one type of agricultural activity (pre-development) to another (post-development) could be legally secured, monitored and enforced through the DCO regime – for example through the use of Requirements/legal agreement
- For all other areas within the site whether or how those areas will remain in agricultural activity with the presence of solar panels and BNG habitat/landscaping implementation

In order to satisfy Schedule 4 (7) of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 the applicant must be able to identify and arguably secure any measures relied upon to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects; not least where this is partly relied upon by any proposed change in agricultural activity across the site.

As a general observation, Landscape comment that this part of Lincolnshire/North Kesteven District is a mainly arable farming area with only limited sheep grazing operations. Whilst it is possible to graze the areas under and between the panels, it is unlikely to be very cost effective for a grazier. The difficulties of rounding up sheep and handling them, together with finding sick or wounded animals makes the grazier's workload harder and more complex. As such the economics of moving sheep to and from the site will be marginal. Grass does not tend to grow well under the panels themselves and there are often areas that are dry and barren or that only host weed species, due to heavy shading.

Grazing management is also not easily compatible with standard biodiversity management practices at Solar Photovoltaic sites due to fundamental population biology principles. As the sites are in arable production at present, currently it may have a relatively low level of biodiversity (although see the comments submitted by AECOM in Appendix 2).

The grazing management plan may, therefore, lead to a modest increase in species richness at the site from current base levels, but it will not deliver the level of biodiversity that the site could potentially achieve if biodiversity gains were prioritised over agricultural production.

By grazing land for agricultural livestock production, the level of disturbance is high. This prevents plant species with a slow establishment rate (which often are those which are ultimately strong competitors) from growing – and thus the invertebrates that feed on these species are also excluded from the area. Areas which promote high species diversity often use low intensity grazing as a means to promoting biodiversity.

Grazing represents a form of disturbance to the area, thus preventing any one species becoming too dominant. It also helps manage the sward to provide an optimum habitat for invertebrates. Stock densities are generally monitored and adjusted to prevent either under and overgrazing and to ensure the sward contains a mix of long and short vegetation with some plants in flower. There is therefore some conflict between maintaining the land in agricultural production and improving biodiversity. Whilst not incompatible, site based issues, such as soil type(s) and local agricultural practices may therefore pose conflicts which the relevant ES chapter/s should assess.

We also advise that the ES contains a farm holdings impact statement with reference to the farm holdings affected by the proposal and which addresses viability, infrastructure and long term consequences on the individual holding. The Soils Management Plan (SMP) should include reference to soil structural issues and waterlogging that has occurred on solar farms elsewhere in the UK – as referred to above and noted in the images provided by Landscape.

Socio Economics

The Scoping Report identifies potentially negative effects associated with the inevitable removal of land from agricultural production and that there may be businesses/tenants/occupiers currently undertaking agricultural operations across the site boundary who may cease to do so for the duration of the operational phase of the development.

Paragraph 13.6.1 states that potential socio-economic impacts are based on the interactions between the expected project activities and the people and communities. Five examples are then given as to where impacts might be anticipated. This should be expanded to consider whether any tourism accommodation providers in the area that will be adversely affected by the solar farm. The chapter also implies that no livelihoods will be lost as a consequence of the development and that agricultural workers may be offered re-training and re-skilling to work on the solar farm, however there is no indication as to what number of farms will be affected by these proposals or what the potential loss of agricultural employment will be.

The Scoping Report covers construction jobs (table 13.1), and how they might impact the local communities in terms of demands on service provision. However there is limited reference to the type of local opportunities the construction process will offer, both in terms of direct job opportunities during the construction phase, and longer term in terms of permanent full time operatives to monitor and maintain the solar farm.

The ES should therefore identify how local businesses may benefit from maintenance contracts related to the project, along with opportunities for specialist contractors to be hosted by local accommodation providers during the construction phase. In addition the Scoping Report refers to the potential to retrain agricultural workers to work on the solar farm, but it does not reference the potential for employment opportunities via apprenticeships. Economic benefits to the town of Sleaford should also be quantified if possible, associated with the possible hosting of construction workforce during the construction phase.

In addition, there is only limited reference in the proposed scope to any socio-economic benefit enduring from continued agricultural use of part or all of the site. For example this could include enabling some continuance of agricultural activity through sheep grazing or alternative forms of cropping among panelled areas (subject to the above comments in relation to agricultural land and soils).

The applicant should therefore quantify whether and how there are socio-economic benefits stemming from a change from predominantly arable agricultural use of the site pre-development to a solar and possibly pastoral use post-development.

We suggest that the applicant should also identify a mechanism by which any changes in agricultural activity (and ergo any associated socio-economic effect) can be secured through the DCO process.

With reference to direct, indirect, temporary and permanent employment jobs created through construction, operation, maintenance and decommissioning, this information should be presented along with identification of;

- opportunities for using local businesses on various aspects of the construction phase;
- how the applicant would go about supporting local business procurement;
- financial estimates of economic benefits of the construction phase to the local economy including hotel spend etc;
- opportunities to encourage apprenticeships; and
- financial estimates and local opportunities associated with ongoing maintenance over the 60-year operational period.

In terms of potential economic benefits, the Council notes that an established way of calculating the extra value generated by local spend on contractors and services would be by using LM3 multipliers which the applicant might wish to consider depending on the certainty of construction contracts etc at this stage. The multiplier can be found at <https://www.lm3online.com/>.

Finally, paragraph 13.4.6 refers to tourism, with table 13.1 referring to potential impacts including potential 'reduction of touristic attraction and change of tourism profile' of the wider area. As set out in further detail below there are potential implications regarding the delivery of the Lincolnshire Reservoir which is partly overlapped by Beacon Fen South.

The Anglian Water project website confirms that the proposed reservoir will also create space for wildlife, such as wetlands, alongside enabling new recreational and educational activities and natural places for people to explore including providing opportunities for local businesses and tourism. The illustrative site plan suggests that the proposals could include watersports and visitor centre facilities which (without prejudice) in their own right have potentially significant broader economic benefits for the District and surrounding areas.

Enhancement of the visitor economy is a key priority for North Kesteven District, and whilst there is not yet any quantitative, qualitative or financial assessment of the above options and opportunities associated with the Lincolnshire Reservoir, it would appear likely to offer more long term employment, socio-economic and tourism benefits and opportunities than the proposed solar farm at Beacon Fen South. Those impacts would also be permanent, not temporary (60 years). In the context of cumulative effects, the ES should therefore seek to quantify any negative socio-economic impacts stemming from potentially prejudicing delivery of the Lincolnshire Reservoir.

14 Issues Scoped Out

Air Quality

We have no objection to Air Quality being scoped out however note that some NSIP solar energy schemes in the District have scoped this chapter in to the ES (e.g. Springwell Solar), and PINS should therefore ensure that there is consistency of approach. Nevertheless there may still be cumulative effects in relation to air quality/dust which need to be considered.

IAQM guidance advises the need for a construction dust assessment if there are human receptors within 50m of the boundary of the site, or within 50m of construction vehicle trackout routes, and if there are ecological receptors within 50m of the site boundary or the trackout routes.

Whilst the site DCO boundary is noted, the layout of development is still fluid and therefore the need for a dust assessment should be reserved until the location of trackout routes and access etc are confirmed.

Paragraph 14.1.7 suggests that a 'residential buffer' will be implemented in relation to potential air quality impacts yet there is no reference to what this buffer might be. Paragraph 14.1.9 states that the potential impacts from dust emissions arising from activities during the construction and decommissioning phases of the proposed development will be considered as part of the ES, however it is assumed that this will be set out through a freestanding CEMP rather than an Air Quality chapter, given that the applicant proposes to scope this out?

Depending on the respective timings of the other cumulative assessment projects referred to elsewhere in this response, construction and HGV air quality/dust assessment might need to consider the Heckington Fen solar park (as a minimum with Beacon Fen North given the proximity of the sites and the probable use of the A17 for component delivery), sensitive receptors along the grid connection route (depending on the preferred option for the cabling) and physical works at BFSS.

Cumulative construction air quality of Beacon Fen North should also include consideration of Springwell solar farm and (depending on timescales) Viking Link and Triton Knoll; again mindful that the A17/A15 is the likely point of construction access.

Human Health, Waste and Risk of Major Accidents and Disasters

We agree that effects to human health as a result of the proposed development can be scoped out as long as reference is made where applicable through the findings of other assessments undertaken as part of the EIA process. We agree that 'waste' can be scoped out as long as there is reference to within reports/assessments to the likely volume and disposal methods of replacement panels and components throughout the operational lifetime.

The applicant also proposes to scope out the risk of major accidents and disasters, which they state will be considered throughout the design process of the proposed development. Presumably this will include siting the potentially hazardous equipment, such as the BESS and grid infrastructure, at a suitable distance from sensitive receptors.

However, whilst PINS agreed to scope out a standalone ES Chapter for major accidents and disasters in consideration of the Heckington Fen Solar Farm, this was on the basis that that the nature, scale, and location of that development was not considered to be vulnerable to or give rise to significant impacts in relation to the risk of accidents and major disasters. In particular, there was some certainty about the likely location of substations and the BESS.

However, there are no layout proposals for Beacon Fen and the location of these features is therefore not known at this time. PINS should therefore carefully consider whether there is sufficient detail at this stage to scope this chapter out of the ES and where we also note from the Heckington Fen Solar Farm that Lincolnshire Fire and Rescue require a smoke plume assessment to be undertaken in relation to the BESS. This might be equally applicable to Beacon Fen.

Ground Conditions

The IDB and Environment Agency should be consulted for their views on the proposal to scope out this topic although we note that no land contamination is anticipated. However, paragraph 14.2.11 confirms that the southwestern corner of the Beacon Fen site, to the south of Helpringham village, includes land that forms part of a groundwater Source Protection Zone I (Inner Protection Zone), as well as parts of the Zone II (Outer Protection Zone) and Zone III (total catchment) areas that surround the Inner Protection Zone. Given that there are no layout options yet presented it cannot be guaranteed at this stage that potentially polluting elements of infrastructure will avoid these zones.

Transboundary effects

The Council agrees that this topic can be scoped out.

Appendices

The Central Lincolnshire Local Plan (2023) is now adopted and replaces the 2017 version, and we can confirm that the Ewerby and Evedon Neighbourhood Plan is still at initial discussion stage.

The 'Emerging Local Planning Policy' section only references a limited number of relevant policies. Additional policies of direct relevance are Policy S16: Wider Energy Infrastructure, Policy S21: Flood Risk and Water Resources, Policy S47: Accessibility and Transport, S53: Design and Amenity, Policy S57: The Historic Environment, Policy S60: Protecting Biodiversity and Geodiversity and Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains.

Cumulative/Prejudicial Impacts - Lincolnshire Reservoir

The Scoping Report does not reference the proposed Lincolnshire Reservoir, whose preferred site overlies part of Beacon Fen South. The Council is not aware of any precedent in relation to overlapping DCO boundaries.

A new storage reservoir in Lincolnshire, referred to initially as the South Lincolnshire Reservoir, has been identified as one of several nationally strategic water resource options required to address future deficits and national and regional need in public water supply. Indeed, the need for the reservoir as a supply side solution is clearly identified in the emerging Water Resources East Regional Plan¹ and also Anglian Water's draft Water Resources Management Plan 2024². Moreover, the project has been registered with Planning Inspectorate.

Under the auspices of the gated process set out by their regulators through RAPID (the Regulators' Alliance for Progressing Infrastructure Development – the regulators being Ofwat, the Environment Agency and the Drinking Water Inspectorate), Anglian Water and Affinity Water have undertaken a comprehensive site selection process to determine the most suitable location for the reservoir and the District Council and other statutory

¹ WRE Regional Plan - [The Draft Regional Plan - Water Resources East \(wre.org.uk\)](https://www.wre.org.uk)

² WRMP24 - [Water resources management plan \(anglianwater.co.uk\)](https://www.anglianwater.co.uk)

stakeholders have been fully engaged with that process as those options have developed over time. North Kesteven District Council became involved in the project in September 2021, as both a statutory consultee and potential host authority for the proposal as an NSIP.

As reported by Anglian Water in their recent Gate 2 submission to RAPID³, a detailed four-stage site selection process has identified and assessed potential suitable locations for the new reservoir based upon a broad range of community, economic, environmental, and other technical criteria. A total of 114 'polygons' – effectively locations/sites – were examined during this process culminating in the identification of a single preferred option being land between Helpringham, Screddington and Swaton. The Beacon Fen South location broadly corresponds with the northern part of the preferred reservoir location.

Stage 1 – initial screening - comprised a high-level review within the Regional Search Area of underlying geology, proximity to the abstraction sources, sites designated for the protection of nature conservation, major infrastructure, and large areas of existing developments such as settlements. This was then used to define the 'Lincolnshire' Study Area, providing more refined boundaries for the site selection process.

Stage 2 comprised 'coarse screening', namely the delineation of areas of land within the Lincolnshire Study Area that could accommodate a strategic reservoir with a minimum footprint of 5km². A series of 'polygons' were delineated, which were then screened against a more detailed review of geological risks, an analysis of major existing utilities and other technical constraints.

24 polygons which presented the lowest level of risk to project delivery were taken forward to a 'fine screening' stage where those polygons were then subjected to more detailed investigation and evaluated against a number of community, economic, environmental and planning criteria. Project affordability and flood risk was factored into that analysis.

This stage then identified a shortlist of four best performing alternatives taken forward to Stage 4 – preferred site selection – of which Polygon D was identified as the best performing polygon, having regard to the advantages and disadvantages of each Polygon against various sustainability and affordability criterion.

Polygon D emerged as the best performing area of land for a reservoir and the land within Polygon D is therefore Anglian Water and Affinity Water's preferred location to accommodate not only the proposed reservoir and associated infrastructure, but additional development located outside the Polygon area which may also be required. Polygon D is illustrated on the attached 'Stage 4 Location Plans' document which is extracted from the publicly accessible October 2022 Anglian Water [Site Selection Report – Lincolnshire Reservoir – phase one consultation, 2022 \(lincsreservoir.co.uk\)](#) (Appendix 5 to this response) and a copy of the publicly accessible indicative site plan is attached as Appendix 6 to this response.

The preferred location was subject to non-statutory consultation in Autumn 2022 and has also been subject to a draft decision from RAPID on the Gate 2 submission⁴.

³ AW's Gate 2 submission - [slr-rapid-gate-two-submission.pdf \(anglianwater.co.uk\)](#)

⁴ RAPID (hosted by Ofwat) draft decision on Gate 2 - [Gate two submissions and draft decisions - Ofwat](#)

An examination of the publicly available documents reveals the extensive work undertaken to meet the regulated process that the reservoir must satisfy, ergo the degree to which the project has been developed from feasibility at Gate 1 to the selection of the preferred option and the concept design at Gate 2.

More detailed design and examination of material planning and delivery issues will be for Gate 3 (September 2024) to support the NSIP pre-application stage before Gate 4 (November 2025) for approval of submission of the DCO. Nevertheless, ahead of the more detailed design stage, it is evident in the public documents that the reservoir will be retained by embankments and will therefore inevitably require extensive ground works and change in land levels. It is also evident that there is the prospect for infrastructure such as the Screddington to Helpringham road to be diverted.

The Beacon Fen South site overlies part of the north and north eastern area of Polygon D; both the illustrative extent of the reservoir itself but also the associated adjacent land identified as necessary for supporting infrastructure, construction and additional works.

The applicant's proposed 5km distance cumulative impact ZOI from the edge of the Beacon Fen South red line will therefore bring in the proposed reservoir site. Paragraph 3.2.23 of the Scoping Report states that development will be included in the initial long-list based on a number of criteria, including submitted applications not yet determined and projects on the National Infrastructure Planning Programme. Elsewhere the Scoping Report envisages submission of a DCO application for Beacon Fen in 2024, a decision in 2025 and without prejudice a 24 to 36 month construction programme commencing in 2026/2027.

The Anglian Water – Lincolnshire Reservoir website ([Frequently asked questions - Anglian Water – Lincolnshire Reservoir \(lincsreservoir.co.uk\)](https://www.lincsreservoir.co.uk)) states that a DCO application is expected to be made in 2025, and for the Secretary of State to make a decision by 2027. These dates are confirmed in the draft Gate 2 decision issued by RAPID on 30 March 2023. The Lincolnshire Reservoir is a registered project on the National Infrastructure Planning website.

Applying the applicant's own approach set out in paragraph 3.2.26, but accepting that timescales associated with both projects is indicative only at this stage, there is the potential for temporal and geographical overlap between the two respective projects meaning that the Lincolnshire Reservoir will be required to be included within the short list of cumulative impacts.

Reference to Advice Note Seventeen: 'Cumulative effects assessment relevant to nationally significant infrastructure projects', Table 2, suggests that the Lincolnshire Reservoir proposal would be either a Tier 2 or Tier 3 project at the point of DCO submission for Beacon Fen.

Whilst the guidance states that a decreasing level of detail is likely to be available as you go from Tier 1 to Tier 3, and paragraph 3.4.3 states that an assessment should be provided 'where possible' for all Tier 2 and Tier 3 project (potentially qualitative, at a very high level and using 'reasonable effort') the Advice Note does not envisage a scenario of potentially overlapping DCO geographical boundaries.

Moreover, the Advice Note is silent on the overlap of the NSIP process with that of RAPID where the regulators themselves have a detailed programme exercised in the public interest and on best value principles to govern the solutions (in this context the reservoir being a solution in providing a new supply of water for the East of England) being presented by water companies throughout England. The RAPID process must, in the Council's reasoned submission, therefore be significant and material in how to regard and assess the emerging reservoir proposal.

The applicant has suggested in their briefing to the Council that as the Beacon Fen proposals are likely to precede the DCO reservoir submission, there will only be relatively limited consideration of cumulative effects following the guidance contained in Advice Note Seventeen and that (paraphrasing) both submissions should be considered in the context of the 'first across the line'.

Clearly the Council cannot 'favour' one application proposal over another and it is the responsibility of both respective applicants to develop their own submission timescales reflective of the scale and nature of the proposals. However, the reservoir is a nationally strategic resource required to address future deficits in public water supply in the East of England, and as set out in the publicly available site selection report referred to above our significant concern here is that the Lincolnshire Reservoir has already conducted an extensive four-stage sifting and screening process over a number of years, supported by detailed social, economic, environmental and financial data, and Polygon D, which overlays Beacon Fen South, is the favoured development site.

The issue of 'alternatives' (broad regional locations, sites, layouts) has therefore been extensively examined and evidenced by Anglian Water and Affinity Water culminating in Polygon D being the preferred option. Indeed, and as highlighted above, the concept design indicates that with the reservoir relying on embankments to hold the water, there is likely to be a significant change in local landform, topography and landscape character. This is confirmed in publicly available documentation. Moreover, in announcing the preferred location the promoters are known to have started a process of land indexation and started discussions with land and property owners on potential private treaty negotiations.

The Council's view is that a solar farm can, subject to site constraint analysis and grid connection options, be accommodated across a broad range of geographies whether within the District, Lincolnshire or nationally. It is very concerning that there is nothing in the applicant's scoping report which gives comfort that 'alternatives' have or will be considered robustly in the context of the extensive sifting and screening process already carried out in relation to the Lincolnshire Reservoir and the potential for prejudicial delivery impacts (with significant implications for regional water resource planning and climate change adaptation).

Also, as referred to under a number of sub-headings above, the Scoping Report's failure to acknowledge the reservoir means that a number of chapters have been prepared on the basis that the baseline environment will largely be 'as existing' at the point that the development commences construction in 2026/27 and that the future baseline will also be largely unaltered throughout the suggested 60-year operational lifetime. Clearly this will not be the case given that, without prejudice to the DCO submission outcome, the Lincolnshire Reservoir will fundamentally alter the surrounding landscape and setting, agricultural land structure, ecological, hydrological and highways 'baseline' – amongst others.

We would therefore encourage the Planning Inspectorate to consider obtaining legal advice on this matter, and at this early stage, to ascertain whether and how overlapping temporal and geographical issues need to be considered – whether by the applicant or the Planning Inspectorate. The Council's position in light of the above is that the entirety of the Beacon Fen South site should be deleted from the project.

Other Matters

The ES should be prepared with reference to the 2023 Central Lincolnshire Local Plan which was adopted on 13th April 2023. In addition as set out above the revised draft NPS EN-3 expressly considers Solar Photovoltaic Generation (page 82 onwards) and is subject to a period of consultation ending on 25 May 2023.

Consequently depending on the point at which the DCO is applied for, and during consideration of the application, either s104 or s105 of the Act will be engaged. Even if still in draft, the March 2023 consultation versions of EN-1 and EN-3 will be a material consideration.

Conclusion

The Council wishes to reiterate that in our view the submission of this request for a Scoping Opinion is clearly premature. It was submitted prior to the commencement of the non-statutory consultation process and furthermore there has been no dialogue or initial engagement, as far as we are aware, with any other consultees with an interest in these proposals. Our position is that this cannot then have allowed the applicant to have meaningfully considered, reflected upon, and addressed even any initial representations made during this initial non-statutory consultation phase, which whilst now underway, significantly post-dates the Scoping Report itself.

On that basis our view is that this submission is clearly contrary to the guidance set out in Advice Note Seven 'Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements'. We are concerned that the timescales adopted unilaterally by the applicant – culminating in this Reg. 10 and 11 Scoping Opinion request to the Planning Inspectorate - has undermined the degree to which the information contained in the Scoping Report could be relied upon as a robust representation of the potential significant environmental effects of the proposed development. This is borne out by the relatively large number of unknown factors or matters 'to be agreed' with relevant consultees. The cable connection corridor is extensive and has not been narrowed down to more focussed route options. This reinforces our concerns regarding the prematurity of this submission. On that basis the Council's view is that the Planning Inspectorate to decline to accept the applicant's request for a Scoping Opinion at this stage.

Furthermore it is concerning and disappointing that the Scoping Report makes no reference to the Lincolnshire Reservoir mindful that this is a registered NSIP proposal in its own right and was a matter of public record prior to the submission of the Scoping Report. There is a temporal and geographical overlap (Beacon Fen South) between the two respective projects meaning that the Lincolnshire Reservoir will be required to be included within the short list of cumulative impacts. Without prejudice, the future baseline environment cannot therefore be assumed to be 'as existing' as presumed throughout the Scoping Report.

The Beacon Fen South site has potentially prejudicial effects on the Lincolnshire Reservoir to the degree that we would advocate that the Planning Inspectorate seek their own legal advice as to the consideration of potentially overlapping DCO boundaries, and our position in light of the above is that the entirety of the Beacon Fen South site should be deleted from the project.

Yours faithfully



Development Manager
Planning Services

Appendix 1 – AAH Consultants response

Appendix 2 - AECOM ecology response 4th May 2023

Appendix 3 - Heritage Trust of Lincolnshire response 12th April 2023

Appendix 4 – Landscape response 17 May 2023

Appendix 5 – Anglian Water Site Selection Report – Lincolnshire Reservoir

Appendix 6 – Lincolnshire Reservoir indicative site plan

Landscape Scoping Report Review

Lincolnshire County Council, Beacon Fen Solar Project

This Review has been carried out by AAH Consultants on behalf of Lincolnshire County Council (LCC) and relates to landscape and visual issues and elements only. It is based upon a review of the relevant sections of the following document and website:

- *Beacon Fen Energy Park, Scoping Report, April 2023*. Prepared by Wardell Armstrong;
- <https://www.beaconfenenergypark.co.uk/#the-project>
- <https://www.beaconfenenergypark.co.uk/wp-content/themes/beaconfen/assets/img/pdfs/PierLincsSolarFarmMapDiagram.pdf>

The site is located near Sleaford, Lincolnshire, and centred at National Grid Reference (NGR) TF 16348 42178. The site comprises two distinct areas of land situated to the north and to the southwest of Heckington, adjacent to Ewerby Thorpe and Thorpe Latimer, respectively

The Proposed Development would have a generation capacity of approximately 600MW, with the BESS of a similar capacity, and would be capable of powering approximately 190,000 homes. The two sites comprise an area of approximately 1036ha. Between the two sites a wide area has been identified to locate the cable route to connect to the national grid via the existing sub-station at Bicker Fen

The report identifies the infrastructure of the project and identifies that there are two options for the central inverters and the transformers, either indoor in a purpose built structure or outdoor. The location of these and the choice of indoor or outdoor would need to be carefully selected in recognition of sensitive receptors. Similarly, the location and determination of the battery energy storage systems needs to assess against the sensitivity of the receptors across the site.

The development has an anticipated construction period of 24 to 36 months, with an operation life of 60 years. At this stage, detail of the construction, which is expected to have an adverse impact is not considered to a significant level of detail and would need, again, to identify and consider fully the impact on sensitive receptors across the site.

The assessment of potential Landscape and Visual matters and evolving proposals relating to the Beacon Fen Solar Project, as a Nationally Significant Infrastructure Project (NSIP), shall follow an iterative process of engagement and consultation to ensure the following are not fixed at this stage and are discussed, developed, and agreed at subsequent technical meetings:

- Landscape and Visual Impact Assessment (LVIA) Methodology;
- ZTV parameters;
- Study Area extents (distance);
- Viewpoint quantity and locations;
- Photomontage/Accurate Visual Representations (AVRs):
 - Quantity and location;
 - Phase depiction;

- AVR Type and Level.
- Mitigation Measures/Landscape Scheme/Site Layout; and
- The extent as to which a Residential Visual Amenity Assessment (RVAA) should be considered (based on the Landscape Institute TGN 2/19) if there are residential properties with receptors likely to experience significant effects to their visual amenity.

We would also expect the production of the Landscape and Visual chapter of the Environmental Statement (ES), which would be in the form of a Landscape and Visual Impact Assessment (LVIA), and any supporting information (such as plans or figures) reflect current best practice and guidance from, as a minimum, the following sources:

- ‘*Guidelines for Landscape and Visual Impact Assessment*’, (GLVIA3), April 2013 by the Landscape Institute (LI) and Institute of Environmental Management and Assessment (IEMA);
- ‘*An Approach to Landscape Character Assessment*’, Natural England (2014);
- ‘*Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals*’, 17th September 2019 by the Landscape Institute (LI);
- ‘*Technical Guidance Note (TGN) 1/20 Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)*’, 10th January 2020 by the Landscape Institute (LI) ; and
- ‘*Technical Guidance Note (TGN) 2/21 Assessing landscape value outside national designations*’, May 2021 by the Landscape Institute (LI).

At this initial stage of the NSIP process, the content and level of information provided by the developer within *Chapter 4* (Landscape and Visual), and *Figures 4.1 to 4.5*, are generally considered satisfactory, however, as stated previously, we would expect to discuss this content and approach as part of the iterative process, and the following should be considered in the evolving assessment and layout:

Viewpoints

Figures 4.1 and 4.3 of the scoping report identifies 16 proposed viewpoints across the two PV sites and the area identified for the cable connection to the sub-station. AAH have undertaken a site visit in early May 2023, and the site characteristics suggest that these viewpoints need to be supplemented by additional ones from further distances in all directions. The selected 16 appear to be appropriate for closer scrutiny of sensitivity, however the final locations and number of viewpoints are to be agreed with LCC and other relevant stakeholders.

Photomontages

To gain an understanding of the visibility of the development and how the panels and infrastructure would appear in the surrounding landscape, Photomontages/Accurate Visual Representations (AVRs) should be produced. It is currently proposed to develop 4 of the 16 viewpoints as photomontages, however it is not clear the justification for the selection of these as photomontages. Viewpoints 9 and 10 have close proximity, whilst the others are spread with a bias to the northwest of the sites, there are currently no proposed photomontages to the southeast of the sites.

The number and location of viewpoints to be developed as Photomontages/AVRs should be agreed with LCC and other relevant stakeholders and produced in accordance with LI guidance: *TGN 06/19 Visual Representation of Development Proposals*. At this stage, it is deemed appropriate that these should be produced to illustrate the proposals at different

phases: Existing Situation (baseline), Operational (year 1) and Residual with planting established (10 to 15 years). The Photomontage/AVR Level and Type is to be discussed and agreed.

Methodology

The scoping report considers the methodology of the ES in chapter 3 and confirms that the LVIA will be carried out in accordance with the GLVIA3 best practice and undertaken by suitably qualified personnel. We would request that the most up to date technical guidance also be used, such as the recently published LI TGN 2/21 *Assessing landscape value outside national designations*.

Chapter 4 considers landscape and visual matters in detail, it is supplemented by the following drawings, which have been assessed during the writing of this scoping report:

- Figure 4.1 Bare ground Zone of Theoretical Visibility).
- Figure 4.2 Topography.
- Figure 4.3 Screened Zone of Theoretical Visibility.
- Figure 4.4 Landscape Character.
- Figure 4.5 Sensitive Receptors and Designated Sites.

Scope of the Study Area:

Field surveys and the ZTV have been used to determine a study area of 5km. Following a site visit by AAH in May 2023 the 5km extent to the study area appears to be appropriate, however the viewpoints currently identified do not include any locations from significant distances from the PV site locations. Additional viewpoints need to be identified in all directions to consider the impacts of long range views. With this in mind the visual connectivity of spires across the study area appears significant and could be impacted by both the development and any proposed mitigation.

The ZTV methodology (figures 4.1 bare ground and 4.3 screened and section 4.5 of the report) utilises a proposed height of 4.5m, however does not contain details of the dimensions of all structures which will form part of the development, such as battery storage. Consequently, the ZTV may be unrepresentative of the full extent of visibility and the ZTV should clearly demonstrate the full extent of the proposed development stating what has been included and the ultimate height/scale. This is of particular interest given the potential options of indoor or outdoor ancillary facilities within the development.

Landscape

Published landscape character areas have been identified, however, to align with GLVIA3 the LVIA should include an assessment of landscape effects at a range of scales and include a finer grain landscape assessment that includes the Site and immediate area and that also considers individual landscape elements such as trees and hedgerows, woodlands, ponds/water features, or historic landscape features.

Visual

The visual assessment should take account of the 'worst case scenario' in terms of winter views, and effects associated with landscape mitigation at the Operational Phase (year 1), Residual Phase with planting having established (10 to 15 years), and at the Decommissioning Phase.

The LVIA should ensure all elements associated with the development are considered and assessed, such as battery storage and boundary fencing, which may be more visible than panels due to height and mass.

The visual assessment should include for visual receptors, and not just an assessment of any agreed viewpoints. It should also clearly cross reference viewpoints to associated receptors.

Cumulative impacts

Cumulative Landscape and Visual Impacts should be assessed, particularly in regard to the Heckington Solar Project.

Mitigation and Layout

As this is an iterative process, at this stage no mitigation measures have been considered in detail. The areas identified as locations for the PV arrays and associated infrastructure are broad and certain aspects of the design remain to be finalised. Likewise, the area identified as potential route for the connecting cable is of significant size. The design of mitigation needs these aspects to be resolved, however the impact on receptors should be used to inform the design of the proposals. The mitigation should reflect the open character of the study area and retain connectivity to key aspects such as the numerous church spires across the small settlements within the study area.

However, best practice guidance, relevant published landscape character assessment's and Local and County Council Policy and Guidance shall be referred to and implemented as appropriate. We would also expect the landscape and planting scheme is coordinated with other relevant disciplines, such as ecology or civils (e.g., SuDS features), to improve the value of the landscape and reflect appropriate local and regional aims and objectives. Any Landscape Scheme and associated Outline Management Plan should accompany the ES.

Kevin Gillespie
AAH Landscape


www.aahconsultants.co.uk

May 2023

Nick Feltham
North Kesteven District Council
Planning Department
District Council Offices
Kesteven Street
Sleaford
Lincs
NG34 7EF

4 May 2023

Our Reference 60468641 Beacon Fen Energy Park

Dear Nick

Beacon Fen Energy Park Scoping Report: Review of Approach for Biodiversity Survey and Impact Assessment

I provide advice below with reference to the Scoping Report dated April 2023. In preparing this advice I have reviewed Chapters 1-3, 5, 14 and 15.

Baseline Conditions

Very little information has been provided in Chapter 5 on the baseline habitat conditions on site, and a habitat map has not been provided. This limits my understanding of the site conditions and the advice I can give.

I agree that the prevailing land use (intensive arable production) limits the range of potential ecological impacts and presents opportunities for biodiversity enhancement. However, this also indicates that the scheme will result in substantive land-use change with a shift from arable cultivation to closed permanent habitats. The impacts and effects of this large scale habitat change could be significant for the species reliant on arable habitats and associated cultivation regimes (certain breeding and wintering birds, and scarce arable flora).

The presence of ditches, hedgerows and woodland is also mentioned, but these are not qualified further.

It seems likely that some of the habitats present will be habitats of principle importance for nature conservation under Section 41 of the NERC Act. Some will also be Lincolnshire Biodiversity Action Plan habitats.

The Applicant should clarify at PEIR stage any coincidence with Strategic Green Infrastructure, including Biodiversity Opportunity Areas (BOAs). These are subject to specific planning policy and are shown on the online Local Plan Policies Map ('Aurora')¹. Appendix 4 of the emerging local plan identifies the principles for development within BOAs.

Known stands of ancient woodland (irreplaceable habitat) have been identified based on the Ancient Woodland Inventory (AWI). The AWI is not definitive and generally omits woodlands smaller than 2ha. Therefore, the Applicant should ensure that all woodlands in the zone of influence have been suitably assessed to demonstrate the absence of potential ancient woodland. Formal consultation with Natural England would be required if potential ancient woodlands are identified. In the absence of this, potential ancient woodlands should be protected in accordance with current Standing Advice².

I found no information on veteran and ancient trees (irreplaceable habitat). These could occur in areas of woodland, as free standing trees or in hedgerows. The presence/ absence of veteran and ancient

¹<https://wlnk.statmap.co.uk/map/Aurora.svc/run?script=%5cShared+Services%5cJPU%5cJPUJS.AuroraScript%24&nocache=1206308816&resize=always>

² <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions>

trees should be clarified in at a later stage of the application. If present, such trees should be protected in accordance with current Standing Advice³.

Proposed Scope

I note that the Applicant does not propose to scope out any ecology matters at this time, instead deferring this to a later stage when more data is available. It is expected that this will be explained in a Preliminary Ecological Appraisal Report (PEA report) later. I agree with this sensibly precautionary approach.

I note that the Applicant proposes to scope out air quality impact assessment. Whilst this can interface with ecology, I agree that for this type of development an air quality impact on ecology is not likely. I therefore do not disagree with the scoping out of air quality.

I consider the approach set out in Chapter 5 to be suitable and I have only minor comments on the proposed approach.

The study areas proposed are appropriately precautionary as a starting point for data gathering and screening of impacts and effects. It would be helpful if the Impact Risk Zones (IRZ) for statutory designations could also be considered. IRZ have been defined by Natural England to assist a rapid initial assessment of the potential risks posed by development proposals.

Chapter 5 identifies a number of Local Wildlife Sites but does not clarify the relative distance of these. This information should be provided later to permit understanding of pathways for impact.

The scope for further survey work is focussed on species. It is not clear what habitat surveys have been completed so far (with the exception of a Phase 1 habitat survey) and what follow-up habitat surveys are proposed or completed. Potentially, this is covered in the scope of the proposed botanical surveys. Habitat and botanical surveys are not automatically the same thing, so the approach should be clarified at PEIR stage. At present, I perceive a potential need for woodland, hedgerow and ditch habitat surveys, along with Site Condition Assessment of habitats for Biodiversity Net Gain (BNG) purposes. In addition, I consider that appropriately timed species-specific surveys for scarce arable flora are also necessary. Other surveys may be appropriate, but I do not have sufficient information on the baseline conditions to advise further.

I assume that Hedgerow Regulations methods will be employed to collect structured data on hedgerows, and to identify any 'important' hedgerows. I encourage this approach and would emphasise that all Hedgerow Regulations criteria should be addressed. These include heritage, landscape and wildlife criteria.

No specific mention is given to Wildlife and Countryside Act Schedule 1 bird species. A variety of such birds could occur, and not all can necessarily be encompassed within the scope of a standard breeding bird survey (e.g. due to the timing of their breeding activity). The PEIR should provide more detail on the approach to Schedule 1 birds. Relevant species will include but may not be restricted to barn owl (which may nest in trees as well as buildings), quail, red kite, hobby and marsh harrier.

The survey approach for badger needs to deliver data suitable to assess the relevant impacts and to meet requirements of Standing Advice⁴. This includes considerations around access to foraging and watering areas, habitat connectivity (given badgers can be faithful to specific movement routes), and implications for territorial boundaries (e.g. from the erection of an extensive network of security fencing). Given the absence of detailed survey information and an understanding of main sett locations, I am not certain that surveys should be restricted to within 50m of the site boundary. This should be clarified further at PEIR stage.

The approach for BNG survey has not been defined. The current best practice method for this is set out in the guidance for Biodiversity Metric 4.0⁵. A MoRPH assessment is likely to be required to calculate baseline river units if watercourses (with the exception of ditches) are present in or adjacent

³ As footnote 2.

⁴ <https://www.gov.uk/guidance/badgers-advice-for-making-planning-decisions>

⁵ <https://publications.naturalengland.org.uk/publication/6049804846366720>

to the red line boundary. In addition to the identified relevance of the Environment Act, the BNG requirements of the emerging local plan should also be noted.

I agree with the approach to ecological impact assessment. This should reference the CIEEM (2022) guidance, as the current iteration of the good practice approach.

I agree with the summary of potential impact pathways. Consideration also needs to be given to any barriers posed by security fencing (e.g. for brown hare, badger and deer) and how this will be mitigated. This is both a nature conservation consideration and an animal welfare consideration.

Given the indicated progress with ecological surveys, it is likely to be feasible to submit a relatively comprehensive and complete ecological impact assessment with the PEIR (as opposed to a more high-level assessment). I encourage this approach as it will permit detailed review and advice in advance of submission of the DCO application.

Biodiversity Opportunities

The Applicant has committed to a BNG assessment within the Scoping Report but has not provided details of the habitat enhancement measures that will be considered. However, I agree with the summary approach (paragraph 5.8.4) for the identification of suitable opportunities.

Opportunities to link or extend existing habitats of higher biodiversity value would be particularly welcome (particularly within Strategic Green Corridors and BOAs), given such existing habitats are often small and highly isolated within the arable landscape. Based on the limited information available, this landscape appears particularly lacking in woodland and scrub, meadow, pond and wetland habitats, and ecotones between these.

Where arable farmland cannot be maintained in cultivation then this would seem a good opportunity to establish native wildflower meadow appropriate to the local soils and geology.

Proposals for habitat enhancement should be realistic and demonstrate meaningful biodiversity gain (not just a gain in units). The Biodiversity Metric is a crude instrument and inevitably indicates BNG wherever arable farmland is replaced by another habitat. However, meaningful biodiversity gain is only likely to be realised where the land is appropriately managed for biodiversity. Putting land down to grassland and then managing this land for livestock production (a change from arable cultivation to pasture) is not sufficient to demonstrate a meaningful gain, particularly given the scale of the arable habitat loss and the implications of this for dependent species.

I advise that care be taken in later submissions not to present mitigation measures as enhancement opportunities. For example, interventions in retained areas of arable land would likely represent mitigation for impacts on birds from loss of arable farmland elsewhere within the site.

Cumulative Impacts and Effects

The need for assessment is identified within Chapter 5 but minimal detail has been provided on the approach (some additional information is available elsewhere in the Scoping Report). I have no comments on the proposed technical approach, which seems appropriate based on the information provided.

This large scheme is one of a number of proposed and comparably large DCO solar schemes within the district and neighbouring planning authorities. Therefore the combined implications for habitat loss, land-use change, and associated impacts on species will need careful consideration in the final DCO application. It would be helpful if more detail on this could be provided at PEIR stage.

Yours sincerely

David Broughton BSc MSc MPhil CEnv MCIEEM
Associate Ecologist
AECOM Limited

Cultural Heritage - comment on Beacon Fen Energy Park Scoping Report

Scoping Report to accompany a request for a Scoping Opinion relating to the Environmental Impact Assessment (EIA) of Beacon Fen Energy Park.

The proposed development is for *a ground-mounted solar photovoltaic electricity generation and battery energy storage system, together with associated grid connection infrastructure* at land surrounding Heckington ('the Site'). The site comprises two areas of land, situated to the north and to the southwest of Heckington, connected by a cable route to Bicker Fen substation.

Study areas:

The Cultural Heritage section of the Scoping Report states that the study areas have been defined as 2km from the site boundary for non-designated heritage assets and 5km for designated historic assets, in line with Lincolnshire County Council's (LCC) guidance for National Significant Infrastructure Projects (NSIP), to include built heritage and archaeological assets.

Consultees:

The Report notes discussions to be held with stakeholders including LCC, Historic England and the local planning authority's (LPA's) conservation officer. Consultation on cultural heritage, relating to matters on archaeology, should also include the archaeological advisors to the relevant LPAs.

Data sources and baseline conditions:

The baseline described in the Report is a summary listing of designated and non-designated heritage assets by site area (Beacon Fen North, Beacon Fen South and the Cable Route Area) and as such represents a limited evidence base. It is stated that a *comprehensive assessment of the baseline information will be presented in the Archaeological Desk-Based Assessment (DBA) and Aerial Assessment*. The Report does not make clear the data sources to be used and the scope (content) of the individual assessment reports.

The DBA should include desk based information for the full extent of all proposed impact areas including the cable or connector routes. The full suite of desk-based information needs to be assessed to inform the baseline and should include LiDAR and aerial photo coverage and assessment. The LCC guidance document (mentioned above) also sets out the data sources that should be included to inform the baseline conditions.

The Settings Assessment/Heritage Impact Assessment needs to demonstrate an understanding of the significance and context of each of the assets in order to assess the impact of the development upon them and propose any mitigation.

Geophysical survey:

The Report (6.7.5) notes that a *Geophysical survey is proposed to be undertaken from April 2023 to determine the presence of archaeological remains*. It further states that the results of the survey will *inform the necessity, extent and location of further archaeological evaluation fieldwork*.

Geophysical surveys are required across all areas of potential impact. The results of the geophysical survey will inform the programme of trial trenching required.

Trial trenching:

There is currently insufficient information on the presence, character, date and significance of any archaeological deposits. The results of the full desk-based assessment including the aerial photographic and Lidar assessments together with the results of the geophysical survey will inform the programme of trial trench evaluation.

In order to determine the presence, absence, significance, the depth and extent of any archaeological remains which could be impacted by the development, trial trenching should target areas where archaeological remains have been identified in the foregoing, non-intrusive surveys as well as areas where the surveys have not detected archaeological remains. The programmes of archaeological evaluation should be set out in a written scheme(s) of investigation (WSIs) to be agreed with the archaeological consultees prior to commencement of the field investigation.

The EIA will require desk-based research, non-intrusive surveys, and intrusive field evaluation for the full extent of proposed impact. The results of the trial trenching, together with the foregoing assessments and surveys, will inform the archaeological mitigation strategy to be presented in the Environmental Statement (ES).

Likely significant effects:

The proposals for construction of a solar farm will necessarily have an impact on any buried archaeological remains. Piling, building foundations, cable trenching, access roads, building compounds and construction traffic are all known impacts and the cumulative effect will be significant.

The section on likely significant effects (6.6) notes the potential for direct impacts on archaeological remains within the proposed development site and potential effects on the setting of heritage assets within the study area. However, the statements and assumptions, by phase (construction, operation and decommissioning), informing the details of matters to be scoped out are based on limited information (a high level search of designated and non-designated assets recorded).

Any proposal to 'descope' designated or non-designated assets must be informed by an evidence base demonstrating the lack of direct or indirect impact upon the heritage asset and its significance. Therefore, it is not considered appropriate to propose that certain heritage assets or impacts be scoped out at this stage.

The Report further states (6.6.10 and 15.2.2) there will be no impacts to the archaeological resource as a result of the decommissioning of the Proposed Development. The nature of the archaeological resource has yet to be determined and assessed and, for example where identified assets may have been avoided / protected in situ during construction / operation they may be under threat from disturbance or destruction during decommissioning. Therefore, cultural heritage should be a consideration as part of any outline decommissioning plans.

Methodology:

The proposed methodology notes documents to be provided to support the ES (6.7.1) and the steps for production of the cultural heritage ES chapter (6.7.12) however, it provides only limited detail. The methodology should be established in discussion with the archaeological consultees.

Archaeological *evaluation fieldwork reports* are listed but it is not specified that this will include the results of a programme of trial trenching. Elsewhere trial trenching is mentioned as a potential mitigation measure (6.8.1).

Trial trenching is required to establish the baseline conditions and to understand the nature and extent of the impacts on the archaeological remains. Without the relevant surveys and site evaluation it will not be possible to assess the likely significant effects of the proposed development and design an appropriate mitigation strategy.

The results of the trial trenching, together with the foregoing assessments and surveys, should be used to minimise the impact on the historic environment through informing the project design and an appropriate programme of archaeological mitigation to be presented in the Environmental Statement (ES).

References:

Reference should be made to planning and specialist cultural heritage and archaeological guidance and standards and should include the Lincolnshire County Council Archaeology Handbook (2019) which sets out requirements for work in the county, including archiving and deposition.

In summary, the ES will need to contain sufficient information on the archaeological potential and must include evidential information on the depth, extent and significance of the archaeological deposits which will be impacted by the development. The results will inform a fit for purpose mitigation strategy which will identify what measures are to be taken to minimise or adequately record the impact of the proposal on archaeological remains.

The provision of sufficient baseline information to identify and assess the impact on known and potential heritage assets is required by Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Regulation 5 (2d)), National Planning Statement Policy EN1 (Section 5.8), and the National Planning Policy Framework.

Denise Drury
Senior Historic Environment Officer
Heritage Lincolnshire
15th May 2023

REVIEW OF SCOPING
REPORT:
(AGRICULTURE AND SOILS)
LAND AT BEACON FEN
SOLAR

May 2023



Review of Scoping Report Beacon Fen Solar Project

The Proposed Development comprises the installation of solar photovoltaic (PV) generating modules, battery storage facilities, and grid connection infrastructure with a capacity in the region of 600MW.

The Site is located mainly within the administrative boundary of North Kesteven District Council, in the county of Lincolnshire. The Site measures approximately 1,702 hectares (ha) and extends across two distinct parcels (referred to as areas of land situated to the north and to the southwest of Heckington, adjacent to Ewerby Thorpe and Thorpe Latimer, respectively.). The Site boundary and two land parcels are presented in **Appendix 1**.

The Northern Panel Array area is approximately 517 ha in size and the Southern Panel Array area is approximately 519 ha in size. These two solar array areas are referred to as 'Beacon Fen North' and 'Beacon Fen South'.

Construction Phase

During the construction phase many of the areas will affect soil and water issues. **Appendix 2** sets out a basic Soil Management Plan that should be established as part of the Construction Phase, to minimise the impact on soil resources. The following headings should be included in the Soil Management Plan.

- Site preparation;
- Import of construction materials, plant and equipment to Site;
- Establishment of Site construction compounds and welfare facilities;
- Cable installation;
- Temporary construction compounds;
- Trenching in sections
- Upgrading existing tracks and construction of new access roads within the Site;
- The upgrade or construction of crossing points (bridges /culverts) at drainage ditches within the Site;
- Appropriate storage and capping of soil;
- Appropriate construction drainage;
- Sectionalised approach of duct installation;
- Excavation and installation of jointing pits;
- Cable pulling;
- Testing and commissioning; and
- Site reinstatement (i.e. returning any land used during construction, for temporary purposes, back to its previous condition).
- Use of borrow pits

Agricultural Land Classification and Soils

The Scoping report confirms that both sites have already been appraised for ALC and maps and detail are provided. Land Research Associates have undertaken reconnaissance surveys. At the moment the cable routes have not been surveyed in detail, but once clearly identified this should be undertaken.

The report confirms:-

Beacon Fen North falls within High likelihood of BMV land (>60 % area BMV) category and Moderate likelihood of BMV land (20-60 % area BMV) category. Beacon Fen South has mainly Moderate likelihood of BMV land (20-60 % area BMV) category with small portions of High and Low as well. The Cable Route Area is mainly High and Moderate BMV

The majority of the site is shown as Grade 3 and/or Grade 2 on the provisional ALC maps of the area. **Appendix 3** shows the approximate location of the 2 main solar areas in relation to provisional land grades. The cable search area includes a wider range of grades including Grades 1 and 2. It is important that:-

That the ALC survey is undertaken in line with the MAFF 1988 guidelines and TIN049. These documents set out the precise methodology by which an ALC survey should be undertaken, with auger bore sampling at 1 hectare intervals and a suitable number of soil pits dug to determine the precise nature of the soil(s). On a site of this size the amount of augering should be around 1,000 auger holes and probably 6 or 8 pits to verify the soil profiles – more if there are significantly different soils.

Soil types should be laboratory analysed for textural assessment to provide accurate information that can be relied upon in calculating the ALC grade.

ALC Survey only at Reconnaissance Level

The two ALC reports appear to be reconnaissance level with around 20% of the normal number of soil auger borings compared to the national guidance.

Indeed the reports acknowledge that:-

A semi-detailed Agricultural Land Classification survey was conducted in October 2022 at selected intersections of a 100 m grid, giving an average density of approximately 1 observation per 5 ha. This density of survey is below that recommended by Natural England for planning applications, and is intended to give provisional grades only. During the survey soils were investigated via a combination of hand auger borings and small pits to a

There are maps of the surveyed areas indicates that ALC work has already occurred across the two Solar array sites, but this work has not been agreed with Natural England. It is acknowledged that as reconnaissance it is not fully in line with the published guidance and does not meet the minimum requirements.

It is my view that where the ALC work has identified differences from published data, particularly the provisional ALC maps and the predicted Best and Most Versatile status, those areas should be considered as a priority.

Estimated BMV Amounts

The Natural England maps of Best and Most Versatile land indicate a medium to high chance of BMV in this location. So far, the ALC work on site runs contrary to this 'expected' outcome, although I have no reason to believe that it is suspect at this stage.

There is undoubtedly a lot of BMV land in this vicinity and only a full ALC will identify where it is and what the Grade and quality is. The detailed reports from LRA should identify whether the land is BMV or not.

The revised programme of soil sampling and pit digging should help complete the picture, assuming it is undertaken in the manner set out in the MAFF 1988 guidelines. It is expected that soil augering will be undertaken on site to determine the grades in accordance with national guidance.

A programme should be outlined to give a more comprehensive view of the soils and ALC Grade(s) of the site. The soil scientists tasked with the work are experienced and should undertake the work correctly.

Cumulative ALC Impacts

There are a number of small(er) and largescale Solar PV schemes in Lincolnshire, with others planned or proposed. There are four known solar project NSIP schemes; specifically in relation to impacts on agricultural land. The situation is a moving picture as new proposals come forward from time to time. Most of these sites are proposed on farmland. Lincolnshire and N Kesteven in particular are agricultural areas with substantial areas of land within the Best and Most Versatile category. Much of the non BMV land will be Grades 3b.

A county-level alternative assessment area should be applied which as a minimum should consider scope for connection into the National Grid at the locations proposed by the registered NSIP solar projects named above, and with specific consideration of agricultural land impacts.

District and County ALC

For a project of this scale there is an impact the project will tie up the land for up to many years, there will be some impact. The area is large locally and if the quantities of BMV are as stated or similar then the impact will be reasonably small. However, if the BMV is greater and of higher grades then I would expect the impact to be significant at a District or County Level.

Environmental Impact Assessments give guidance on the size and quality of Land Grade that is or can be affected by development proposals. The loss of such a large area of land would normally be considered as significant at District level, even though the use is 'temporary'. Any permanent loss of land due either to construction or through biodiversity designation may affect this assessment.

Soils

The Site comprises soils of Beccles 3 (711t) association, which are found in all three sections. They are typically Slowly permeable seasonally waterlogged fine loamy over clays soils and similar soils with only slight seasonal waterlogging.

Soils of the Ruskington (512c) association are mapped in Beacon Fen North and the Cable Route Area. These soils are occasionally waterlogged (Wetness Class II), sandy loam topsoils and brownish or reddish subsoils.

Soils of the Ragdale (712g) association are mapped in Beacon Fen South. These soils are seasonally waterlogged (Wetness Class III or IV) clay or clay loam topsoil over greyish brown subsoil.

Soils of the Wallasea 2 (813g) association are mapped in Beacon Fen North and the Cable Route Area. These soils are occasionally waterlogged (Wetness Class III or IV, when undrained), silty clay topsoils over greyish silty clay subsoils. Deep stoneless clayey soils, calcareous in places. Some deep calcareous silty soils. Flat land often with low ridges giving a complex soil pattern. Groundwater controlled by ditches and pumps.

All of these soils are at risk of compaction, structural damage and a lot will rely on land drainage. These can all be affected during the process and the environmental assessment should consider this aspect.

Some example of local soils are given in **Appendix 4**

Soil Structure

Soil structure can be significantly damaged during the construction phase of the process. There is a lot of trafficking of vehicles on the land to erect the panels and if this work is undertaken when soils are wet, there can be significant damage. Much of this damage can be remedied post construction but not all and it is possible that long term drainage issues occur on the site due to the construction. **Appendix 5** shows photographs of before during and after construction of a large solar farm in Hampshire where soil structural issues were a major problem post construction. Once the panels are in place usual agricultural practices such as subsoiling become difficult

Ecological effect

If the land is used for biodiversity, it would not be available for agriculture. However even if it is available for some form of cutting or grazing it is unlikely that the ALC grade will change significantly during the life of the project. There is evidence that organic matter builds up in biodiversity areas at a faster rate than arable farmland and this may benefit the land, but it is not a factor in the assessment of ALC.

Long term, where biodiverse land becomes ecologically important there is the possibility of land becoming assigned with environmental designations, such as SSSI status, though generally this has not so far occurred on other solar sites.

Revisions to the Environmental Impact Assessment rules regarding the cultivation of agricultural land suggest that if land remains uncultivated for longer than five years, then permission may be required from Natural England to bring the land back into cultivation.

Any material enhancement in the botanical diversity of the sward (to the extent that this site is considered to be of ecological value), will limit the capacity for the land to be returned to arable use after the solar plant has been decommissioned. The EIA (Agriculture) (England) (No.2) Regulations 2006 prohibit the physical or chemical cultivation of what are considered to be 'semi-natural areas'.

Cultivation is not clearly defined and does not necessarily require land to have been ploughed or the soil to have been disturbed. The application of pesticides and fertiliser may be sufficient, but the biodiverse areas are much less likely to receive these treatments once established and there is the possibility that large areas of environmentally interesting land may therefore not be allowed to return to arable farmland after the project period. This is a complex area as there may be planning conditions that require land to be returned to agriculture as part of any consent and it is an open question whether the compliance with a 'restoration' condition 'trumps' any future environmental status or requirement.

Grazing management at this Site is not easily compatible with standard biodiversity management practices at Solar Photovoltaic sites due to fundamental population biology principles. As the site is mostly in arable production at present, it currently has a relatively low level of biodiversity. The grazing management plan may, therefore, lead to a modest increase in species richness at the site from current base levels, but it will not deliver the level of biodiversity that the site could potentially achieve if biodiversity gains were prioritised over agricultural production.

By grazing land for agricultural livestock production, the level of disturbance is high. This prevents plant species with a slow establishment rate (which often are those which are ultimately strong competitors) from growing – and thus the invertebrates that feed on these species are also excluded from the area.

Areas which promote high species diversity often use low intensity grazing as a means to promoting biodiversity. Grazing represents a form of disturbance to the area, thus preventing any one species becoming too dominant. It also helps manage the sward to provide an optimum habitat for invertebrates.

Grazing for biodiversity enhancement usually occurs between October and April, which will allow plants to flower and set seed. The stock densities are monitored and adjusted to prevent either under and overgrazing and to ensure the sward contains a mix of long and short vegetation with some plants in flower.

There is therefore some conflict between maintaining the land in agricultural production and improving biodiversity. Whilst not incompatible, site based issues, such as soil type(s) and local agricultural practices may create future problems. The biodiversity areas may target the highest grades on agricultural land and any future restriction that might prevent its return to cultivation should be a consideration in the planning process and in the conditioning of any consent.

Farming and Agricultural Impact

This part of Lincolnshire is a mainly arable farming area with only limited sheep grazing operations. Whilst it is perfectly possible to graze the areas under and between the panels, it is unlikely to be very cost effective for a grazier. The difficulties of rounding up sheep and handling them, together with finding sick or wounded animals makes the graziers workload harder and more complex.

As such the economics of moving sheep to and from the site will be marginal. However, most examples quoted do not charge much or anything for the grazing and this may make it sufficiently attractive for a local farmer or shepherd with a 'flying flock'.

Land in use for solar panels is generally ineligible for the normal agricultural subsidies, such as the Basic Payment Scheme (now being phased out) and the Environmental Land Management Scheme (ELMS). It does not prevent land from being managed in similar ways but there will be no payments available to farmers (eg graziers) for compliance and this could make farming less financially attractive going forward.

The site will probably have to be seeded to grass, but this will probably occur after the panels have been sited on the land. In my experience grass does not grow well under the panels themselves. There are often areas that are dry and barren or that host weeds.

The impact on local farm businesses should be investigated and the scale of any loss quantified.

Further Comments

Cable Route

The Cable Route Area is predominantly Grade 2 (2,411.9 ha, 65.9 % of the cable route area), with portions of Grade 1 (337.5 ha, 9.2 % of the cable route area) in the east and Grade 3 (908.8 ha, 24.8 % of the cable route area) in the north and west.

The cable route will be a temporary construction feature with soils reinstated. It is important that land drainage is considered carefully along the route.

A soil management plan should be considered for the cable route in order to minimise the impact on soil structure, land drainage and ultimately soil quality. Guidance is available in published documents.

The route passes across and will be buried under mainly open countryside that is largely arable farmland with some areas of pasture and parkland.

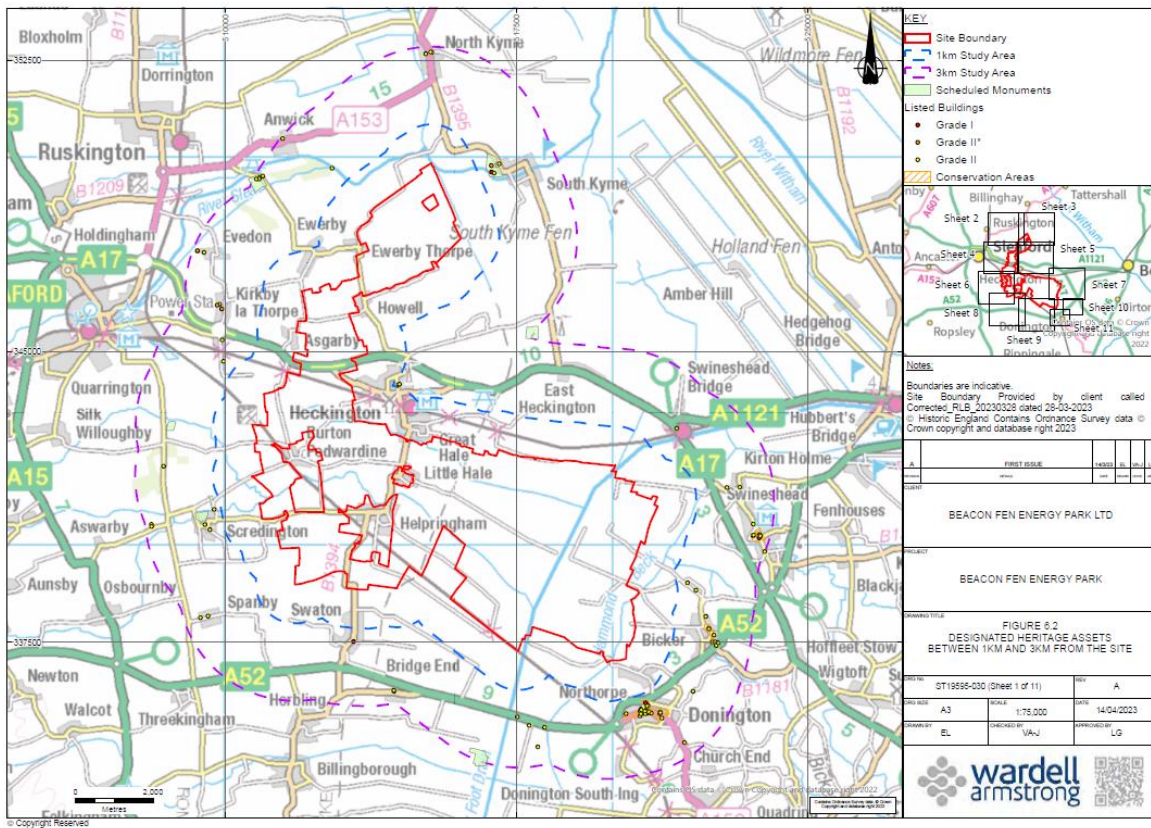
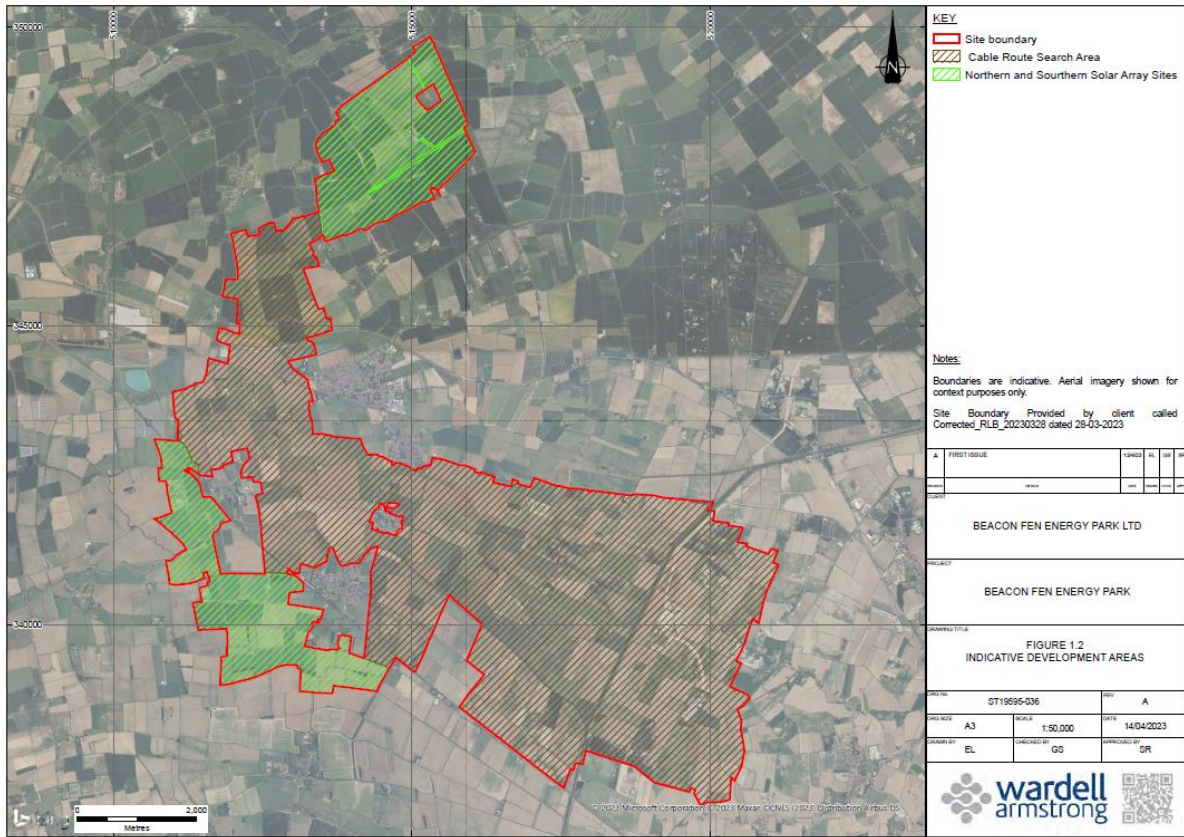
Two key groups of impacts have been identified for the purpose of defining receptor sensitivity and impact magnitude:

- Land use and tenure: these are the potential impacts on human activity, including landowners, occupiers, local communities and other land users
- Agriculture: these are potential impacts on the soil resource, the surrounding environment and the agricultural productivity of the land.

Additional concerns include land drainage impact during construction and restoration of cable trenches.

Site Boundary

Appendix 1

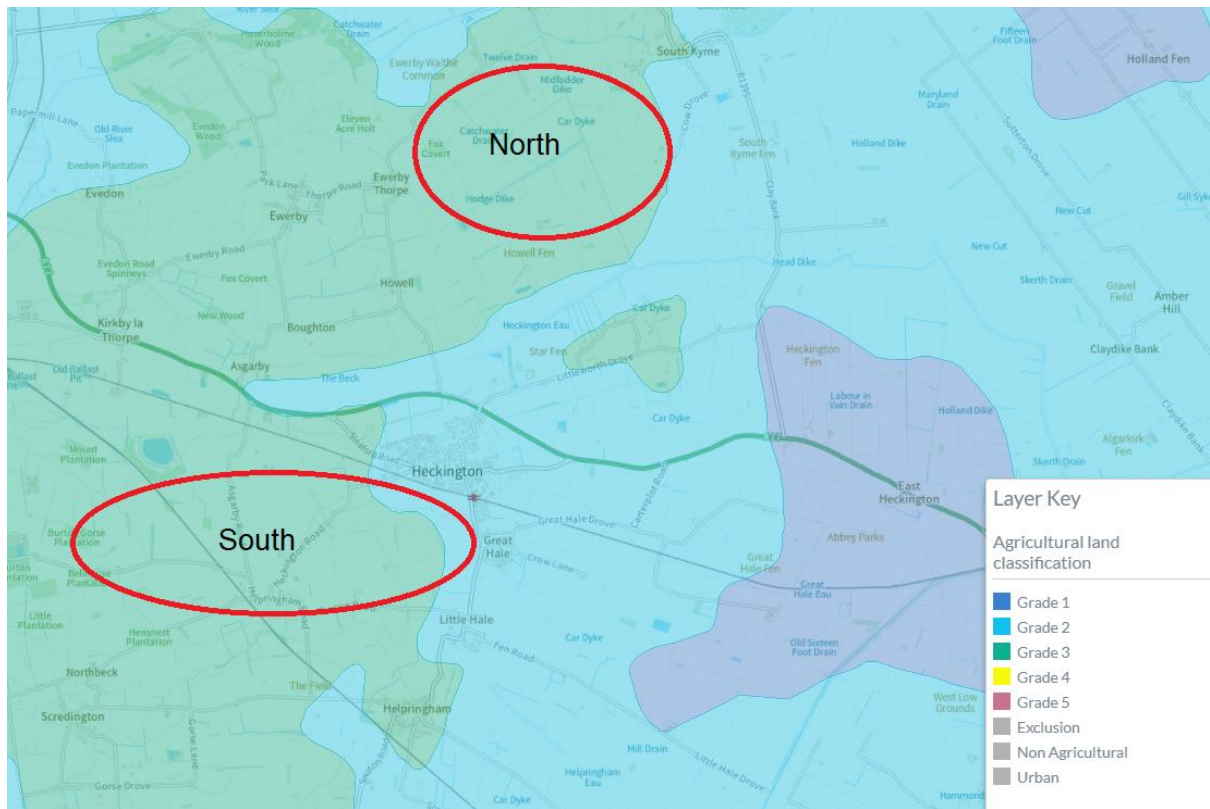


Appendix 2

Soil Management Plan

1. The soil stripping, handling, storage and replacement operations should be undertaken in a manner that is consistent with suitable specification and methodology set out in a Soil Management Plan.
2. All topsoil and subsoil material shall be stripped from areas affected by top soil storage bunds, subsoil storage bunds, general fill bunds, hard-standings and other constructions including temporary access roads and vehicle trafficking routes, and shall be stored separately in bunds from any imported material and shall be used for the restoration of the temporary soil storage site unless otherwise agreed in writing by the Local Planning Authority.
3. Soils should be stripped, stored and replaced in line with the MAFF Good Practice Guide for Handling Soils Sheets 1, 2, 3 and 4 - <http://webarchive.nationalarchives.gov.uk/20090306103114/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm> .
4. Topsoil and subsoil storage bunds should be placed in approved locations and constructed to ensure secure storage without damage, loss or contamination.
5. Topsoil and subsoil should be stored in bunds not exceeding 3m in height above adjacent existing ground level and shall be constructed and shaped by excavator only (dump trucks should not traffic across the bunds at any time).
6. Imported general fill material should be stored in bunds not exceeding 4m in height above adjacent existing ground level.
7. Bunds should be seeded to grass at the earliest opportunity and shall not be allowed to over-winter without grass cover.
8. No topsoil or subsoil should be sold or otherwise removed from the site.
9. Within 3 months of their construction, the Developer should provide a detailed plan of soil storage bunds showing details of position, volume and soil type. The Developer shall be responsible for maintaining an up-to-date record of all soil storage and general fill bunds throughout the life of the site.
10. The stripping, movement and re-spreading of topsoil and subsoil material should only be undertaken when the topsoil and subsoil material is in a dry and friable condition and the ground is sufficiently dry to allow the passage of heavy machinery and vehicles over it without damage to the soils.
11. All injurious weeds, as defined by the Weeds Act 1959, growing within the working site should be eradicated or adequately controlled by approved method.
12. All vegetation growing on soil storage bunds and peripheral areas within the site should be kept in tidy condition by cutting at least once during the growing season.
13. The boundary of the development should be made stock proof for the duration of the temporary development.
14. All temporary plant, machinery, buildings, fixed equipment, roads and areas of hard standing including site compounds should be removed.
15. The natural subsoil base material should be comprehensively ripped to a minimum depth of 500mm to break up surface compaction before any soil material is spread. The developer should give the Planning Authority notice of an intention to carry out this operation. All large stones and boulders, wire rope and other foreign material arising should be removed. Special attention should be given to areas of excessive compaction such as haul roads where deeper ripping may be necessary.

16. The Developer should be responsible for providing all necessary training of operatives and site supervision by suitably qualified personnel to ensure that the soil replacement operation is carried out in the approved manner.
17. Prior to the commencement of spreading soil, all stones, boulders or foreign objects likely to impede normal agricultural cultivations should be removed from that area.
18. The soil material set aside for use in any agricultural restoration should be spread uniformly in the correct sequence (subsoil followed by topsoil) over the ripped base material, and should be rooted and scarified to full depth without causing mixing between different soil layers. The reinstated agricultural soil profile should be total 450mm thickness overlying prepared and free draining natural stony base material, and should consist of 250mm topsoil and 200mm subsoil derived from the soil stripping operation. This soil profile should meet the technical requirements of the identified Agricultural Land Classification Grade on restoration.
19. All base material ripping, soil spreading and cultivation operations should be carried out in such a manner as to minimise compaction and achieve unimpeded drainage down through the soil profile.
20. Any part of the site restored for agricultural purposes which is affected by localised settlement that adversely affects the agricultural after use should be re-graded including the re-construction of the soil profile to approved specification.
21. Following restoration of the soil materials, the land will be cultivated, seeded and managed appropriately for a minimum of a year and until agreed with the Local Planning Authority that the land meets satisfactory requirements.



Example Soil Types Locally

0813g WALLASEA 2

Detailed Description

This association is extensive on reclaimed marine alluvium in the marshlands of Lincolnshire, Cambridgeshire and Norfolk, and is also present in Romney Marsh, the Essex marshes and in Holderness. The land is generally level but there are occasional ridges on the sites of former creeks. The soils are mainly Wallasea series, pelo-alluvial gley soils; Newchurch series, pelo-calcareous alluvial gley soils; Blacktoft series, gleyic brown calcareous soils; and Wisbech series, calcareous alluvial gley soils. Wallasea and Newchurch soils are clayey with a greyish brown topsoil over greyish or grey and ochreous mottled subsurface horizons; Newchurch series is calcareous. Blacktoft soils are calcareous and fine silty with grey colours and mottling in the subsoil. Wisbech soils are also calcareous, but have greyish and mottled coarse silty horizons below the plough layer, often with sedimentary laminations. Wallasea series predominates and Newchurch, Blacktoft and Wisbech soils are common. Dymchurch, Snargate, Agney, Stockwith, Tanvats and Paglesham series also occur.

Wallasea soils consistently constitute over half of the association, but the proportion of other soils varies widely throughout the country. Generally, Wisbech and Blacktoft series are found on or near former creeks (rodhams), with Wallasea and Newchurch soils in the intervening areas. The incidence of creek ridges, and so the proportion of coarser soils, increases seawards where Blacktoft soils cover a third of the land, except in Lincolnshire where the similar Agney series is more common. The proportion of the less common Wisbech soils also increases seawards. Inland towards high ground, clayey soils are predominant, Wallasea soils being most common in Lincolnshire and Cambridgeshire, but in Norfolk, Newchurch and Wallasea soils are co-dominant. In places in Lincolnshire, Wallasea soils have developed from former Downholland soils from which topsoil organic matter has been lost by oxidation. Wisbech soils are rare in north Lincolnshire and non-calcareous soils, including Pepperthorpe and Tanvats series, become more common. Near Huttoft, where islands of Devensian till rise through the alluvium, some Holderness soils are included. Creek ridges are uncommon in Essex and Wisbech soils are rare. Calcareous fine silty Agney soils cover one sixth of the land and non-calcareous Tanvats and Paglesham soils also occur. Locally there are a few saline soils and, where leaching has occurred, subsoil structure has deteriorated causing silting of drains, waterlogging and reduced crop yields.

As there are very few creek ridges near the Humber, Wallasea soils predominate over large areas, with Newchurch and rarer Dymchurch soils occurring randomly. Blacktoft soils are found round the edges of the delineations, and, less commonly, Burlingham soils are included where the association adjoins soils on Devensian till. It occurs in Humberside between Sunk Island and the Holderness till plain; in Cleveland along the tidal reaches of the Tees; and in Northumberland in two very small areas near Alnmouth Bay and Beadnell Bay.

In the central part of Romney Marsh in Kent, the association corresponds to the land type with creek ridges on decalcified "Old" marshland. On creek ridges on either side of the Rhee Wall, non-calcareous coarse silty Snargate soils are dominant, with finer textured Tanvats soils, formerly part of the Finn series, towards their margins. Wallasea series is the main soil of the

pool areas between the creek ridges with subsidiary Dymchurch and Pepperthorpe soils. In the west of the Marsh, calcareous Wisbech, Blacktoft and Agney soils are locally common and in the north-east where creek ridges are few and narrow, Wallasea, Pepperthorpe and Newchurch soils dominate, with Tanvats series as the main soil on creek ridges.

Soil Water Regime

Most of the land is pump-drained and the more permeable Blacktoft and Wisbech soils are well drained (Wetness Class I). Wallasea and Newchurch soils are less permeable but respond to underdrainage; drained soils are occasionally waterlogged (Wetness Class II) but undrained soils are waterlogged for long periods in winter (Wetness Class III or IV). Droughtiness assessments for selected crops are given in Table 38. Droughtiness slightly restricts the growth of arable crops in Wallasea and Newchurch soils. Wisbech soils have large available water reserves and are non-droughty whilst Blacktoft soils are intermediate in droughtiness. Grassland suffers from drought on all soils in south Lincolnshire, Norfolk and Essex but growth is less restricted in the higher rainfall area of north Lincolnshire.

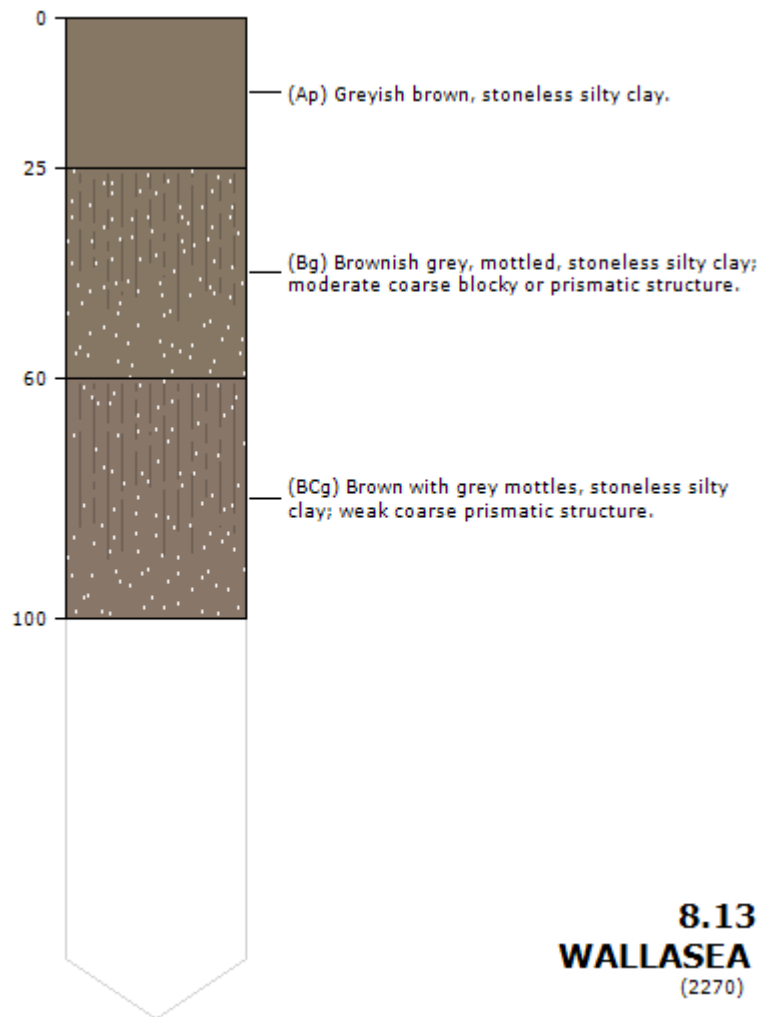
Cropping and Land Use

With adequate underdrainage, Wallasea and Newchurch soils are moderately easy to work. There are adequate days for safe cultivation in autumn and spring, but in north Lincolnshire the moist climate reduces the opportunity for spring cultivation, particularly in wet years, and the soils are marginal for spring-sown crops. The land is generally used for winter cereals and ley grassland, but sugar beet, peas and field brassicas are grown in the drier districts. The use of heavy machinery often causes topsoil compaction and surface wetness on the heavier soils especially Wallasea series though they can be direct drilled very successfully if subsoiled periodically. Newchurch soils which are calcareous have a more stable structure. Wisbech and Blacktoft soils are less suitable for direct drilling because of the problems associated with this system on silty soils.

Definition

Major soil group:	08 ground-water gley soils	Seasonally waterlogged soils affected by a shallow fluctuating groundwater-table. They are developed mainly within or over permeable material and have prominently mottled or greyish coloured horizons within 40 cm depth Most occupy low-lying or depressional sites.
Soil Group:	1 alluvial gley soils	With distinct topsoil, in loamy or clayey recent alluvium more than 30 cm thick.
Soil Subgroup:	3 pelo-alluvial gley soils	(clayey with non-calcareous subsoil)
Soil Series:		clayey marine alluvium

Brief Profile Description



0712g RAGDALE

Detailed Description

The Ragdale association covers 1,297 km² and is extensive on chalky till in Lincolnshire, Leicestershire and Northamptonshire and also occurs locally in Bedfordshire, Buckinghamshire, Warwickshire, Gloucestershire and Oxfordshire. It consists of clayey Ragdale series pelo-stagnogley soils, and Beccles series typical stagnogley soils, which together account for four-fifths of the land. The Ragdale and Beccles soils are developed in till which has a grey clayey matrix containing chalk stones, and some lenses of fine loamy material. Beccles soils have fine loamy upper horizons over clayey subsoils. Both series have mottled upper horizons and contain quartzite pebbles or flints. Chalk stones are usually found in the subsoil but are occasionally absent. Ashley, Hanslope and Faulkbourne soils also occur in places. In south Leicestershire, especially on the sides of valleys incised into the till plateau, some Salopand Flint soils occur where reddish till is close to the surface. Here there are small areas of Ashley soils where the till is covered by a thin layer of coarse loamy drift. In

Warwickshire the association is found east of Coventry and in small patches north of Stratford upon Avon, near Moreton-in-Marsh, Lighthorne and Bishop's Itchington. Here as also near Oakham and Melton Mowbray the association is composed almost entirely of Ragdale series with a few Hanslope and Faulkbourne soils but Beccles soils are absent. In general there are fewer Beccles soils in the Midlands than further east in Cambridgeshire and Norfolk.

The association ranges from 8 m O.D. east of Lincoln to over 170 m O.D. in Northamptonshire. In Cambridgeshire and Bedfordshire it occurs sporadically whereas in east Suffolk, Northamptonshire and Lincolnshire it covers large areas on wide, level and gently sloping plateaux. Beccles soils cover almost half of the land in parts of Lincolnshire. East of Lincoln, some of the Ragdale soils have reddish as well as greyish clay in the subsoil. Where the association is mapped in Moreton Vale, Ragdale soils make up about half of the land, the remainder being mainly Beccles and Ashley soils in roughly equal proportions. Hanslope series, a common associate elsewhere is absent.

In north Buckinghamshire the association occurs on the southern limits of the chalky till usually as small patches capping interfluvies. It is most extensive on land near Buckingham and west and north of Leighton Buzzard. Here, Ragdale soils cover three-quarters of the land, the remainder consisting of Beccles and Ashley soils. Hanslope soils are usually confined to convex slopes where the calcareous till is near the surface.

Soil Water Regime

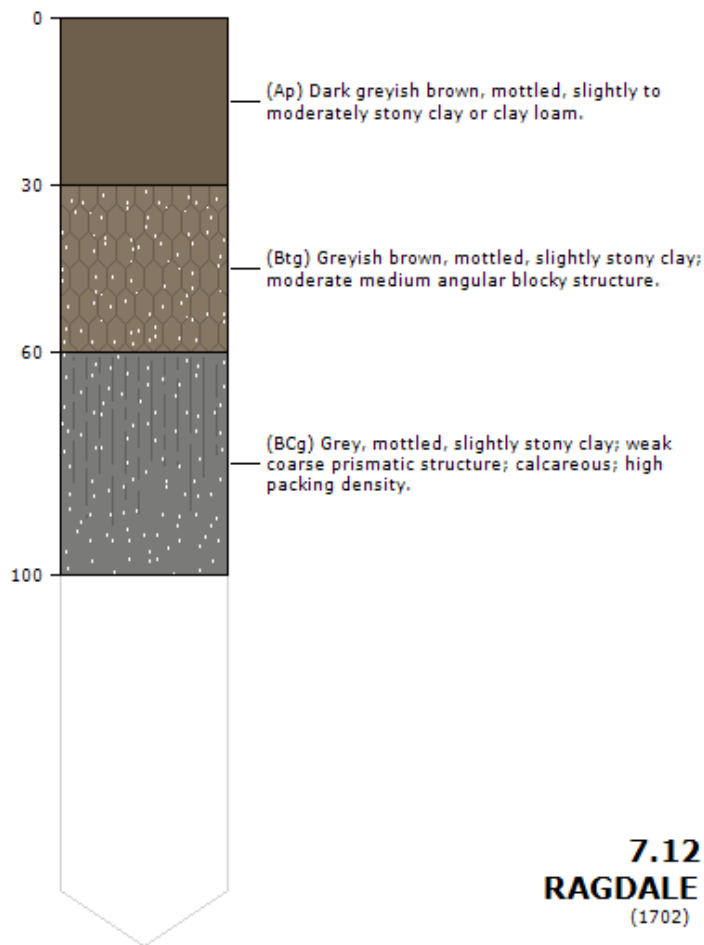
The dense, clayey slowly permeable subsoils restrict vertical water movement so Ragdale, Beccles and Faulkbourne soils- are seasonally waterlogged (Wetness Class III and IV) their water regimes varying with climate and the efficiency of drainage measures. Hanslope and Ashley soils are less frequently waterlogged (Wetness Class II and III). There is rapid run-off of surplus rainfall during winter.

Cropping and Land Use

The soils are difficult to cultivate because of their slowly permeable clayey and fine loamy horizons. Spring cultivations are particularly hazardous, especially on the Ragdale series, because of wetness. This restricts arable cropping largely to winter cereals with oilseed rape as a break crop. Although some sugar beet and potatoes are grown there are harvesting difficulties in wet years. When cultivations are carried out under wet conditions, the resulting structural damage reduces the already low porosity and causes prolonged waterlogging, often above the soil surface, and the death or retardation of seedlings due to lack of soil oxygen. Ragdale and Beccles soils may be direct drilled but rarely in spring because of wetness. Because of the compaction which occurs under continuous arable cropping, particularly after harvesting and cultivations in wet conditions, the Ragdale association benefits from periods under a grass ley to restore soil structure. Even then trafficability is low and poaching risk high on grassland. The component soils are classed as moderately droughty for grass because of their high clay content and low porosity, which restricts the available water capacity. Hanslope soils have similar profile available water values to the Ragdale series. There are scattered remnants of formerly extensive deciduous woodland.

Definition

Major soil group:	07 surface-water gley soils	Seasonally waterlogged slowly permeable soils, formed above 3 m O.D. and prominently mottled above 40 cm depth. They have no relatively permeable material starting within and extending below 1 m of the surface.
Soil Group:	1 stagnogley soils	With a distinct topsoil. They are found mainly in lowland Britain.
Soil Subgroup:	2 pelo-stagnogley soils	(clayey)
Soil Series:		clayey chalky drift



Appendix 5

Conditions during construction



Conditions as construction proceeds



Commencement



Mid construction



Near completion

Examples of Localised Drainage Issues/ No Grass Under Panels



Main Site Entrance



Condition Pre-commencement



Condition Mid construction



Post completion and establishment

Site Selection Report

For a Reservoir in Lincolnshire



October 2022

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Glossary and Acronyms

AONB	Area of Outstanding Natural Beauty
BMV	Best and Most Versatile land
Conservation Targets	Conservation targets were used as part of the Systemic Conservation Process to provide local and landscape scale scores which evaluate the impacts and opportunities of each Polygon on habitats, designated sites and regional biodiversity targets, as agreed with stakeholders. This included conserving, restoring and enhancing of habitats and designated sites.
Factor of Safety	The Factor of Safety used in the preliminary reservoir assessments is a comparison of the stabilising actions (weight of clay) against destabilising actions (uplift pressures) and is used to assess stability and risk of hydraulic failure due to uplift.
ha	Hectares
HRA	Habitats Regulations Assessment. Assessment of European sites protected under the Conservation of Habitats and Species Regulations 2017, as amended.
km	Kilometre
km²	Square kilometre
ktCO₂e	Kilotonnes of carbon dioxide equivalent. A metric measure that is used to compare the total emissions of greenhouse gases, in this case generated during construction.
ktCO₂e/year	Kilotonnes of carbon dioxide equivalent per year. A metric measure that is used to compare the total emissions of greenhouse gases, in this case generated on an annual basis during operation.
kV	Kilovolt
Lincolnshire Study Area	The broad study area identified in Lincolnshire identified at Stage 1 – initial screening - in which the proposed reservoir could be delivered.
LWS	Local Wildlife Site
mAOD	Metres Above Ordnance Datum
MCDA	Multi-criteria Decision Analysis
NCN	National Cycle Network. A UK network of signed paths and routes to encourage cycling and walking.
Net Present Value	The present-day financial value of costs for construction and operation calculated over a 100-year period.
NPS	National Policy Statement. A document, produced by the government, which sets out the objectives for development of

nationally significant infrastructure, and what needs to be considered in the planning, designing, consenting, and carrying out of such Schemes.

NRN	National Recovery Network. A national network of wildlife-rich places aimed to expand, improve and connect these places across cities, towns, countryside and the coast as committed to in the government's 25 Year Environment Plan.
Polygon	The indicative area or parcel of land within which the reservoir and its embankments could be developed.
Project Promoters	Anglian Water and Affinity Water
PRoW	Public Right of Way
RAPID	Regulators' Alliance for Progressing Infrastructure Development. RAPID is made up of three water regulators – Water Services Regulation Authority (Ofwat), the Environment Agency and the Drinking Water Inspectorate.
Regional Plan	A detailed plan developed by regional water resource groups providing a detailed picture of the future water resource needs of each region, setting out the type and scale of the challenge to public water supplies while also considering the needs of the environment.
Regional Search Area	The Regional Search Area used at Stage 1 – initial screening - to determine the broad study area for use at Stage 2 – coarse screening. It was located in the east of England, covering an area of approximately 29,000km ² broadly aligned with the WRE regional planning boundary.
Regulation 19 Derogation	This refers to regulation 19 of The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, and specifically relates to works that result in the deterioration of a WFD waterbody being permitted provided that no suitable alternative is available (having regard to cost and technical feasibility), all practicable steps to mitigate the adverse effects have been taken and the works are being undertaken, for example, for reasons of overriding public interest.
Reservoir	The reservoir including the water footprint and embankment.
Scheme	The reservoir and related development required to operate the reservoir (including water treatment works, transfers and abstraction).
Sequential Test	A sequential, risk-based approach to development and flood risk set out in the National Planning Policy Framework. It is applied to ensure that areas at little or no risk of flooding (from all sources) are developed in preference to areas at higher risk of flooding.
Site	The potential location or area where the Scheme may be developed.
SSSI	Site of Special Scientific Interest
SSSI IRZ	Site of Special Scientific Interest Impact Risk Zone

South Lincolnshire Reservoir Working Partnership	Stakeholder engagement group established for the final stage of site selection and ongoing engagement, which includes the South Lincolnshire Water Partnership, local planning authorities and statutory stakeholders.
South Lincolnshire Water Partnership	Existing stakeholder group consisting of local stakeholders. This group informed the approach taken for site selection and contributed to the findings and outcomes of the earlier site selection stages.
WFD	Water Framework Directive. European Directive (2000/60/EC) transposed into English and Welsh law through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, to protect from deterioration of waterbodies. Requires assessment of effects on WFD waterbodies.
WRE	Water Resources East. One of five regional water resource groups (made up of different interested organisations, including water companies for that region) responsible for development of regional plans aligned with the National Framework for Water Resources.
Water Resource Management Plan	Developed by the respective water company, this sets out what action they will take and the investment that will be needed to meet the requirements set out in the regional plan.

Executive Summary

A new storage reservoir in Lincolnshire, referred to as the South Lincolnshire Reservoir, has been identified as one of several nationally strategic resource options required to address future deficits in public water supply. Anglian Water and Affinity Water have undertaken a comprehensive site selection process to determine the most suitable location for this reservoir.

A four-stage site selection process has identified and assessed potential suitable locations for the new reservoir based upon a broad range of community, economic, environmental, and other technical criteria (constraints and opportunities). The methodology, criteria and findings have been informed by subject matter experts and local stakeholders. These stakeholders were engaged through the South Lincolnshire Reservoir Working Partnership which includes the South Lincolnshire Water Partnership, local planning authorities and statutory stakeholders.

Stage 1 – initial screening - comprised a high-level review within the Regional Search Area of underlying geology, proximity to the abstraction sources, sites designated for the protection of nature conservation, major infrastructure, and large areas of existing developments such as settlements. This was used to define the Lincolnshire Study Area, providing the boundaries for the site selection process.

Stage 2 – coarse screening - involved the delineation of areas of land (referred to as “polygons”) within the Lincolnshire Study Area that could accommodate a strategic reservoir with a minimum footprint of 5km², based on preliminary design requirements to accommodate a reservoir of the size determined as being required by regional water resources modelling. 108 polygons were delineated. These polygons were screened against a more detailed review of geological risks, an analysis of major existing utilities and other technical constraints. Polygons were then ranked to identify those containing the greatest level of constraint on project delivery. 24 polygons which presented the lowest level of risk to project delivery were taken forward to fine screening.

At Stage 3 – fine screening - these 24 polygons were then subjected to more detailed investigation and evaluated against key differentiators, including community, economic, environmental and planning criteria. In consultation with the Environment Agency, a strategic Sequential Test was carried out to prioritise polygons which were both affordable and carried the lowest level of flood risk. This stage identified a shortlist of four best performing alternatives taken forward to Stage 4 – preferred site selection. These were titled Polygons A, B, C and D.

At Stage 4 – preferred site selection - more detailed desk-based assessments by subject matter experts and further stakeholder engagement informed a comparative review of the four remaining polygons. These polygons were considered against nineteen criteria to identify the best performing polygon, having regard to the advantages and disadvantages of each Polygon against each criterion.

Polygon D emerged as the best performing area of land for a reservoir and the proposed site is south-east of Sleaford, about halfway between Grantham and Boston.

The Scheme will be subject to further assessment and scrutiny as it progresses through more detailed design. This will include an Environmental Impact Assessment and further stakeholder engagement to inform mitigation requirements to minimise adverse effects and maximise potential benefits. The land within Polygon D will host the proposed reservoir, and some associated infrastructure, but additional development located outside the Polygon area may also be required. As our proposals for the Scheme develop through consultation with the local community and stakeholders further design will take place to finalise the location of the reservoir within the Polygon and the location of this associated development.

1 Introduction

This report summarises the site selection process used to identify the best performing location for the proposed South Lincolnshire Reservoir. This chapter outlines the strategic need for a reservoir in Lincolnshire and introduces the four-staged site selection process undertaken to identify the most suitable location for development of a strategic reservoir.

A new storage reservoir in Lincolnshire, referred to as the South Lincolnshire Reservoir, has been identified as one of several nationally strategic resource options required to address deficits in future public water supply. The reservoir, promoted by Anglian Water and Affinity Water (the “Project Promoters”), is being progressed through the fast-tracked delivery framework overseen by the Regulators’ Alliance for Progressing Infrastructure Development (RAPID) and will be a Nationally Significant Infrastructure Project seeking consent through the development consent regime.

A comprehensive site selection process has been undertaken to determine the most suitable location for this reservoir. Further details on this process are set out in this report including the criteria applied, how stakeholders have provided inputs to the process and the engineering principles used to define the extent of land required for the new reservoir. The process sought to avoid or minimise adverse environmental or social impacts and maximise the wider opportunities that the reservoir may present.

1.1 Strategic need

The South Lincolnshire Reservoir featured in the Water Resource Management Plan 2019¹ as one of the supply-side options that Anglian Water would investigate further as part of their adaptive planning activities to ensure that the Scheme would be ready to implement should it emerge as a preferred option in future plans. The option would be supplied from a new abstraction point on the River Witham, capturing surplus flow for storage in a new reservoir sited approximately 40km from the intake in Lincolnshire, subject to further modelling and site investigation.

Anglian Water and Affinity Water are experiencing significant challenges across the region. Weather is becoming more extreme, and there is an increasing population which places greater emphasis on the need for water supply resilience during extreme droughts. Water abstraction from environmentally sensitive areas also needs to be reduced to meet the stretching environmental ambitions as set out in the National Framework for Water Resources². The draft Water Resource Management Plan 2024 will set out a best value plan for meeting these challenges, but the scale is such that the challenges cannot be met through demand management solutions alone. The Water Resources East (WRE) draft Regional Plan, is supported by water resources modelling which has identified the need for two new strategic raw water reservoirs in the region to address part of the supply deficit – the South Lincolnshire Reservoir and the Fens Reservoir.

Whilst these reservoirs are a fundamental component of the long-term water resource plans for the region, providing a safe, resilient supply of drinking water is not their sole purpose. The reservoirs will also provide environmental, socio-economic and wellbeing benefits for the communities they serve.

¹ <https://www.anglianwater.co.uk/siteassets/household/about-us/supplieside-option-development.pdf>

² <https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources>

For the South Lincolnshire Reservoir, regional water resources modelling has confirmed that the required capacity to meet public water supply requirements should be 50 million cubic metres to provide a supply of up to 166 megalitres per day.

1.2 The site selection process

The Project Promoters have undertaken a four-stage site selection process to identify and assess potential suitable locations for the new reservoir based upon a broad range of community, environmental, economic, and other technical criteria (constraints and opportunities). This comprehensive, staged site selection process is summarised in Figure 1.

Figure 1: Staged site selection process for the South Lincolnshire Reservoir



A fundamental component of the site selection process has been the consideration of relevant legislation and emerging national policy and, in particular the draft National Policy Statement (NPS) for Water Resources Infrastructure³. During the development of the site selection process, stakeholders were invited through the South Lincolnshire Reservoir Working Partnership to comment on the methodology; their feedback has influenced the approach and screening process.

Stage 1 – initial screening comprised a high-level review of constraints within a Regional Search Area to identify a broad study area in Lincolnshire suitable for siting a strategic reservoir.

Stage 2 – coarse screening, involved the delineation of areas of land (referred to as “polygons”) within the Lincolnshire Study Area that could accommodate a strategic reservoir. These polygons were screened against geological risks, the presence of major existing utilities and analysis of environmental, development planning, community and technical constraints. Polygons containing the fewest constraints to project delivery were recommended for the long list of polygons taken forward to the next stage.

At **Stage 3 – fine screening** the longlisted polygons were subject to more detailed investigation and evaluated against key differentiators, including community, economic, environmental and planning criteria. In consultation with the Environment Agency a strategic Sequential Test was carried out to prioritise polygons which were both affordable and carried the lowest level of flood risk. The results of this identified a short-list of the best performing polygons taken forward to Stage 4.

At **Stage 4 – preferred site selection** more detailed desk-based assessments were undertaken by subject matter experts and further stakeholder engagement informed a comparative review of the four remaining polygons. This culminated in the identification of the best performing polygon. Further detail about each stage of site selection is provided in the following chapters.

³ https://consult.defra.gov.uk/water/draft-national-policy-statement/supporting_documents/draftnpswaterresourcesinfrastructure.pdf

2 Initial, Coarse and Fine Screening (Stages 1 to 3)

This chapter outlines the approach and results of the first three stages of the site selection process: initial screening, coarse screening and fine screening. This included identifying the study area (Stage 1), delineating areas of land (“polygons”) for development of a reservoir (Stage 2) and determining the best performing polygons (Stage 3) for progression to Stage 4 – preferred site selection.

2.1 Stage 1 - Initial Screening

Initial screening was completed within the Regional Search Area to identify broad study areas which would be technically feasible for siting the strategic reservoirs. The Regional Search Area for both strategic reservoirs broadly aligned with the WRE regional planning boundary, covering an area of approximately 29,000km². Key considerations in the initial screening appraisal included the:

- Suitability of the underlying geology for a reservoir.
- Presence of sites designated for nature conservation and/or heritage value.
- Presence of existing strategic transport infrastructure.
- Presence of large areas of existing development, such as settlements.
- Presence of low-lying land, susceptible to sea level rise.
- Proximity to available abstraction sources and the associated carbon impacts of pumping water long distances.

Suitability of the underlying geology is the key consideration in siting a new strategic reservoir so as to ensure the integrity of the structure. The geological suitability of the bedrock geology, superficial deposit types and thicknesses were assessed to identify the areas that would be most suited for locating a strategic reservoir.

There are many sites across the East of England which are designated for nature conservation. Highly sensitive and protected areas include Ramsar sites, National Parks, Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interest (SSSI), National Nature Reserves and Areas of Outstanding Natural Beauty (AONB). These sites were identified and avoided, in addition to highly sensitive heritage features comprising Scheduled Monuments and World Heritage Sites.

Preliminary hydrological assessments confirmed that the River Witham and the River Great Ouse have water available for licensed abstraction during periods of high and medium flows⁴. A carbon assessment was completed to determine areas that were considered most and least favourable in terms of total annualised operational carbon impact resulting from the transfer of water to fill a reservoir.

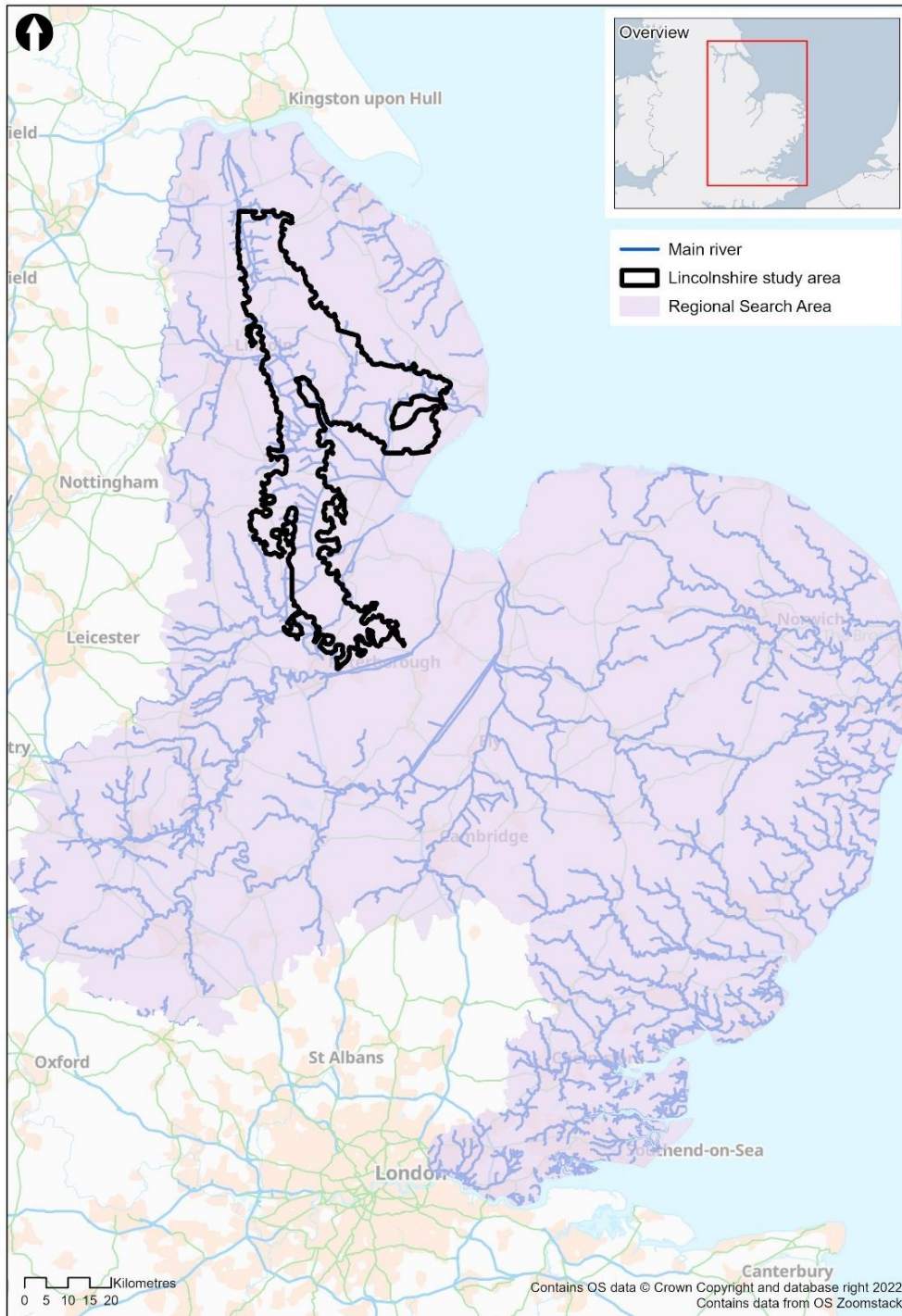
The constraints investigated through initial screening were combined and two broad study areas were delineated – one in Lincolnshire and one in Cambridgeshire. This stage identified a study area, of approximately 1,900km², within Lincolnshire that avoids geologically unfavourable areas, highly sensitive environmental and heritage designations, and low-lying land susceptible

⁴ Abstraction will be reliant on securing permission from the Environment Agency and will be subject to ongoing studies and successful application. For the purpose of this stage of assessment, it has been assumed that an abstraction licence will be granted based on published information in relation to water availability and preliminary discussions with the Environment Agency.

to coastal inundation from sea level rise. The presence of developed land use was minimised where possible and areas considered unfavourable in terms of carbon were excluded, where the distance from water sources could give rise to the highest levels of carbon emissions from both construction and operation.

The Lincolnshire Study Area is presented in Figure 2.

Figure 2: Lincolnshire study area



2.2 Stage 2 - Coarse Screening

Within the Lincolnshire Study Area, polygons of land were identified that could accommodate the embankments and stored water forming a strategic reservoir. These polygons were required to have a minimum land area of 5km² based on preliminary design requirements related to the need to accommodate a reservoir that could store 50 million cubic metres of water. The polygons were delineated, using geospatial data and mapping software, to avoid the most sensitive environmental, heritage, developed land use and infrastructure constraints. Where possible, boundaries were drawn along existing features in the landscape including roads, railway lines and statutory main rivers. This process identified 108 polygons as shown in Figure 3.

These polygons were then screened using a three-step evaluation process involving:

1. A more **detailed review of geological constraints** was undertaken to determine a preliminary geological risk. This critical step considered suitability of bedrock for the proposed reservoir construction. It also considered the risk of failure from hydraulic or groundwater uplift, where water pressure in any permeable stratum lying beneath the base of the proposed reservoir could potentially exceed the vertical stress of the overlying material which could cause a failure of the reservoir foundation. This assessment was informed by published geological information from the British Geological Survey and regional groundwater levels from the Environment Agency. An initial Factor of Safety against the risk of hydraulic uplift failure was determined and only polygons with a Factor of Safety above 1 were progressed, following industry best practice. This step screened out 31 polygons, and 77 polygons predominantly in the east of the study area progressed to step 2.
2. **Analysis of major existing utilities**, which assessed the presence of high-pressure gas mains, overhead and buried transmission lines operated by National Grid, and electrical transmission cables with a voltage greater than 400kV. This strategic gas and electricity infrastructure is prominent across the Lincolnshire Study Area and would represent a substantial risk to project delivery. This was found to be present in the centre of the study area in a mainly north to south direction. This step screened out 24 polygons, and 53 polygons without any major utilities present within their boundary progressed to the third step of coarse screening.
3. **Strategic analysis of performance against environmental, development planning⁵, community and technical constraints**, was completed by subject matter experts using available data. Professional judgement was used to determine whether any constraints affected the feasibility of project delivery at the remaining polygons. Consultation with stakeholders through the South Lincolnshire Water Partnership was undertaken during coarse screening to capture any important local features and sensitive receptors. Considerations included the proximity to transport infrastructure, community and property features, local plan designations, nature conservation and designated sites, potential for archaeological finds and the presence of assets designated for their historical importance, agricultural soils and the presence of peat. Polygons were assessed and the 24 polygons which presented the lowest level of risk to project delivery were taken forward for Stage 3 – fine screening.

⁵ This category included Local Plan land use allocations, Neighbourhood Plans, presence of Nationally Significant Infrastructure Projects, Major development proposals and land use constraints (e.g. green belt, safeguarded land and designated common land).

2.3 Stage 3 - Fine Screening

Fine screening incorporated two processes to support and inform decision-making on the remaining 24 polygons for progression to preferred site selection. These were:

- Technical appraisals and stakeholder engagement, including Systematic Conservation Planning and Multi-criteria Decision Analysis (MCDA).
- Sequential, risk-based assessment of flood risk.

Desk-based technical appraisals were undertaken by subject matter experts using available information to characterise the attributes and performance of each Polygon in relation to:

- Community constraints (flood risk; land grade and soils; property and business; traffic and transport).
- Environmental constraints (historic environment; carbon; landscape character and visual amenity; water quality; biodiversity and nature conservation).
- Planning constraints (relationship with land designated for planning purposes).
- Potential benefits (habitat creation, reducing flood risk, socio-economic and community).

Further detail regarding the attributes considered against each criterion is provided in Appendix A.

In the case of constraints and opportunities related to biodiversity and nature conservation, Systematic Conservation Planning was used to supplement the analysis. This was a stakeholder-informed process that identified priorities for biodiversity and nature conservation both within the polygons and the regional landscape.

For each of the criteria, polygons were scored allowing them to be ranked from best performing to poorest performing for each criterion. The MCDA was completed with stakeholders (through the South Lincolnshire Water Partnership) to enable a transparent comparison of each of the technical attributes associated with each polygon. This process ensured that stakeholder inputs were considered alongside those of the Project Promoters. The MCDA helped to determine the best performing polygons.

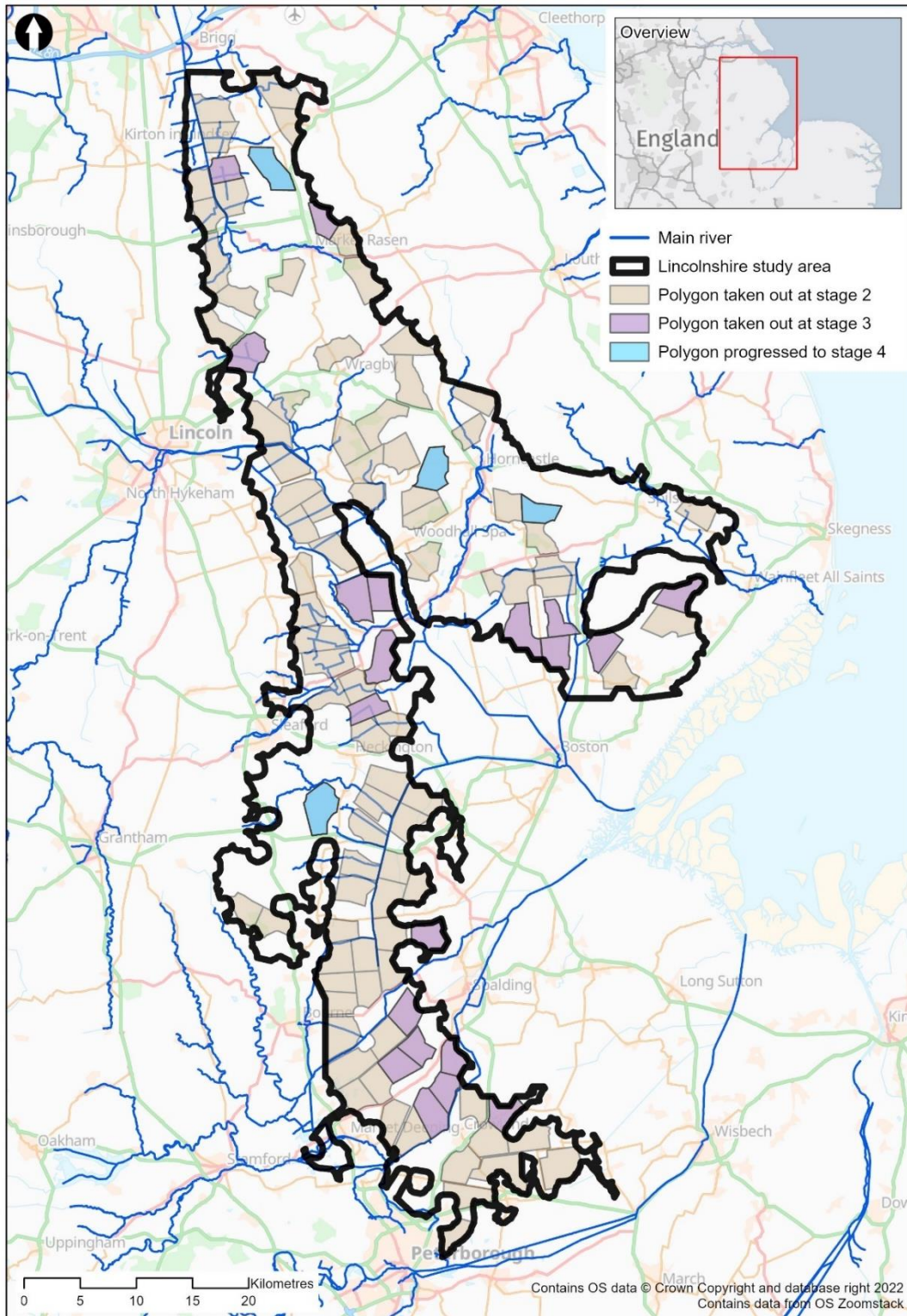
The MCDA process incorporated cost-benefit analysis with preliminary estimated costs derived from outline design assumptions. Development at many of the polygons would be likely to represent excessive cost to consumers. The project team concluded that any Polygon with a preliminary cost estimate of greater than £2bn (circa £3bn including risk and early development phase contingency) would not be economically viable or that alternative sources of water (for example from desalination) might offer better value for money at this higher cost level. Seven of the 24 polygons assessed at Stage 3 met, or were within 5% of, this cost threshold.

Subsequently, a sequential, risk-based approach to development and flood risk (as set out in the National Planning Policy Framework) was applied in consultation with the Environment Agency. The approach is designed to ensure that areas at little or no risk of flooding are developed in preference to areas at higher risk of flooding. Application of the sequential approach in the plan-making process, in particular application of the Sequential Test, steers new developments to be built within Flood Zone 1 (areas with a low probability of river or sea flooding) ahead of Flood Zone 2 (areas of medium probability of river or sea flooding) or as a last option Flood Zone 3 (areas of high probability of river or sea flooding).

Of the seven polygons that were below or within 5% of the cost threshold, only four (polygons A, B, C and D) were found to be predominantly in Flood Zone 1. The remaining three polygons were all located within Flood Zone 2 or 3 and were not considered for any more detailed investigation, on the basis that through the Sequential Test there were alternative polygons at a lower risk of flooding.

Whilst polygons A and D performed better in the MCDA than polygons B and C, it was decided that they would all be taken forward to the short-list for further assessment at preferred site selection. Figure 3 depicts the results of Stages 1 to 3 of the site selection process.

Figure 3: Map depicting the location of the polygons screened in the site selection process

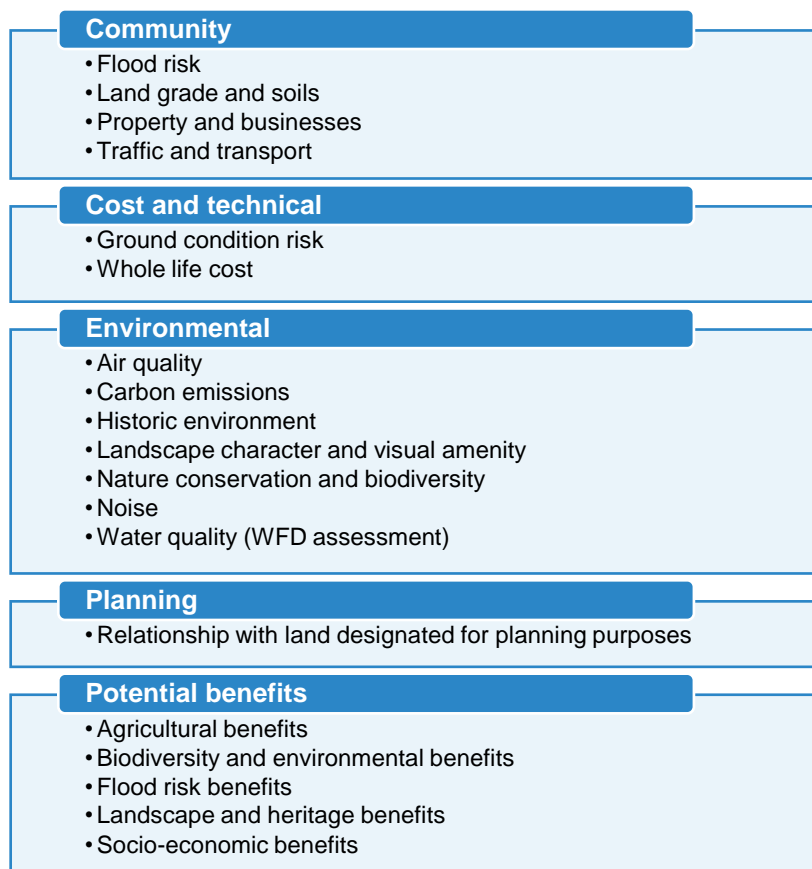


3 Stage 4 – Preferred Site Selection

The final stage of the site selection process involved a comparative review of the four short-listed polygons based on desk-based technical appraisals and stakeholder workshops to establish the most suitable area of land for development of a reservoir. This chapter summarises the approach and outcome of Stage 4 – preferred site selection.

The four polygons were appraised against the site selection criteria, as listed in Figure 4, using desk-based quantitative and qualitative analysis, carried out by subject matter experts using professional judgement. In addition, stakeholders were engaged through the South Lincolnshire Reservoir Working Partnership to appraise potential benefits at topic-specific stakeholder workshops. This comparative review allowed for the multiple strengths and weaknesses of each Polygon to be weighed up against one another in an expert led approach aimed at identifying the best performing Polygon for development of a strategic reservoir. A full list of features considered under each of these criteria groups is presented in Appendix A.

Figure 4: Preferred site selection criteria



Location maps for the four polygons screened at Stage 4 are provided in Appendix B. A summary of distinguishing features, based on the collective professional judgement of the project team and technical experts, for each of the selection criteria categories is provided in Appendix C. Features for each of the selection criteria that did not materially differ between the four polygons have not been detailed in Appendix C on the basis they were not distinguishing factors in the site selection process.

3.1 Polygon A

Polygon A is located approximately 7.5km north of the town of Market Rasen, between the settlements of South Kelsey, Holton le Moor and North Owersby in the West Lindsey District Council area. The A46 runs parallel to the lower eastern edge, with the B1205 to the north.

It is situated within an area of gently undulating open countryside, near the Lincolnshire Wolds AONB. Both Polygon A and its surrounding area are dominated by arable farmland, with small pockets of broadleaved deciduous woodland and grassland. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.2 Polygon B

Polygon B is located approximately 24km east of the city of Lincoln, between the settlements of Horsington and Thimbleby in the East Lindsey District Council area. The B1190 Horncastle Road which links Horsington and Thimbleby crosses through the polygon.

It is situated within an area of gently undulating open countryside. Both Polygon B and its surrounding area are dominated by arable farmland, with patches of plantation woodlands and tree belts. It includes fields of varying sizes defined by ditches and hedges with occasional trees. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.3 Polygon C

Polygon C is located approximately 6km southeast of the town of Horncastle, south of the settlement of Hameringham in the East Lindsey District Council area.

It is situated within an area of gently undulating open countryside, near the Lincolnshire Wolds AONB. Both Polygon C and its surrounding area are dominated by arable farmland, neutral grassland and small isolated blocks of woodland, the largest of which is Home Wood. It includes fields of varying sizes defined by ditches and hedgerows. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.4 Polygon D

Polygon D is located approximately 7km southeast of the town of Sleaford, between the settlements of Swaton, Screddington and Helpringham in the North Kesteven District Council area. South Kesteven District Council's administrative boundary is approximately 100m south of the polygon, south of the A52 Holland Road. The Peterborough to Lincoln railway line runs along the north-eastern boundary with the North Beck watercourse situated just north of the Polygon boundary.

It is situated within an area of gently undulating open countryside. Both Polygon D and its surrounding area are dominated by arable farmland and small isolated blocks of woodland. It includes fields of varying sizes defined by ditches and hedgerows. Land use includes a mix of residential properties, businesses and agricultural holdings.

3.5 Comparison of polygons

Analysis against the selection criteria demonstrated that Polygons A and D performed well in comparison with Polygons B and C.

Most notably polygons B and C were found to be significantly more expensive. Cost estimates undertaken in Stage 3 were updated in Stage 4 based on further analysis of ground conditions, which shifted these two polygons well above the cost threshold.

While Polygons B and C performed relatively well in respect of some of the environmental criteria and potential benefits criteria, these were not significant enough to outweigh their

materially poor performance against the community, cost, technical and planning criteria when compared to Polygons A and D. In terms of the community criteria, they would result in the loss of Grade 2 (very good) best and most versatile (BMV) agricultural land, with Polygon C having the greatest direct impact on agricultural holdings. Polygons B and C would result in the loss of the highest number of residential properties, with Polygon B also having resulted in the highest loss of non-agricultural business. Polygon C would cause significant disruption to the local road network, particularly given the high number of HGVs.

Based on this analysis, it was concluded that neither Polygon B nor Polygon C would present a viable alternative.

The differences between Polygons A and D were carefully considered. The analysis concluded that Polygon D outperformed Polygon A for most of the criteria. This included nature conservation and biodiversity, landscape character and visual amenity, historic environment, carbon emissions, traffic and transport and whole life cost. Notably, Polygon D was considered to provide the ability to deliver more significant biodiversity and environmental, flood risk and socio-economic benefits than Polygon A.

The suitability of bedrock and superficial deposits were comparatively similar at Polygons A and D, both with shallow superficial deposits offering a high percentage of reuse as embankment and landscaping material. Ground condition risks, however, were considered to be marginally lower for Polygon A as a small corner of Polygon D was found to be at potential risk of hydraulic failure due to faulting and potential for hydraulic uplift. Despite this, achieving a cut-fill balance was found to be easier at Polygon D whilst avoiding the ground risk. Consequently, Polygon D has lower whole life cost and carbon emissions. Polygon A would require a longer pipeline to transfer the source water to fill the reservoir, further contributing to higher whole life costs and carbon emissions.

Polygon A would result in the permanent loss of the Grade II 'Yewfield Farm Cottages at Yewfield Farm' and this could not be mitigated. Development of a reservoir at Polygon D would impact the significance of the Scheduled Monument at Thorpe Latimer through the removal of the associated ridge and furrow remains potentially giving rise to "substantial harm". However, as this is not a physical impact to that asset it can be mitigated through the design and construction of the reservoir embankment adjacent to the asset. There would also be a lesser impact on the setting of nearby listed churches, resulting in "less than substantial harm". The permanent loss of the heritage asset at Polygon A means that in heritage terms, it was considered that it performs worse than Polygon D.

Development at Polygon A was considered to have the potential to affect the special qualities of landscape character of Lincolnshire Wolds AONB due to its proximity to that site.

Both polygons would likely require use of the WFD derogation process. Polygon A, however, would result in twice as much open watercourse being lost in comparison to Polygon D. And while Polygon D would result in the loss of around 6ha priority habitat compared to approximately 3ha at Polygon A, Polygon A would have greater indirect impact upon priority habitat in the surrounding area and result in the loss of Thornton le Moor Road Verges Local Wildlife Site (LWS).

Polygons A and D were largely similar in respect to community criteria. Both would lose Grade 3 (good) BMV agricultural land. Polygon D would need the loss of fewer residential properties compared to Polygon A but would also result in the loss of two non-agricultural businesses. Polygon A, however, had a much higher impact on agricultural holdings both in terms of total land take and impacting viability of other agricultural land.

In conclusion, the Polygon that clearly emerged through this fourth stage as the best performing was Polygon D. It was also favoured by the South Lincolnshire Reservoir Working Partnership stakeholders during opportunity workshops. Advantages of this Polygon were found to include:

- It requires the loss of the fewest number of residences and the lowest impact envisaged on agricultural holdings.
- It avoids loss of high quality (very good and excellent) agricultural land.
- The bedrock is suitable for development of a reservoir, with shallow layers of reusable superficial material providing opportunity to achieve a cut-fill balance relatively easily.
- The A52 would offer good access to the polygon, with the cut-fill balance requiring the lowest numbers of heavy goods vehicles (HGVs).
- It has the lowest capital and operational costs of the four shortlisted polygons.
- It has the lowest carbon emissions, considered important to the water industry's target for net zero.
- It would not result in loss of sites designated for nature conservation, instead providing opportunity to achieve Conservation Targets as identified through Systematic Conservation Planning.
- It would not impact on designated landscapes or protected views.

There are also many opportunities that the selection of this Polygon could unlock, such as:

- It could provide opportunities for promoting sustainable travel; active travel/lifestyles; recreation and tourism; and green infrastructure.
- It could benefit from river transport of materials during construction and could enhance navigation opportunities along the South Forty Foot Drain between Boston and Donington High Bridge.
- It could improve environmental corridors such as the Boston-Peterborough wetland corridor, North Beck River corridor, Swaton Fen and Bourne-Sleaford corridor.
- It could provide various opportunities to reduce flood risk for communities in Swaton and Helpringham, including the restoration of Swaton Eau and Helpringham Beck.

4 Preliminary Site Boundary

The four-staged site selection process has considered the economic and technical feasibility of delivering the Scheme within the Lincolnshire Study Area. Through the consideration of the site selection criteria across the four stages, the Project Promoters identified a best performing Polygon within which the reservoir, together with its embankments, could be located.

In addition, it is recognised that supporting development in relation to the operation of the reservoir will be required. The potential need for at least some of that development to be located outside of the boundary of Polygon D has been identified and is described below.

The second and third stages of site selection focussed on the suitability of identified polygons to host the reservoir and its embankments, which would be constructed within the boundaries of those polygons. It is further recognised that additional development, possibly located outside of the Polygon areas, would also be required to operate the reservoir, including water treatment works, emergency draw-down facilities, access roads, renewable energy generation and car parking. The environmental and social benefits of the project will also be dependent upon the delivery of other features that could include additional planting, visitor and educational centres, habitat creation and restoration and leisure facilities, many of which would also be situated outside of the selection polygons.

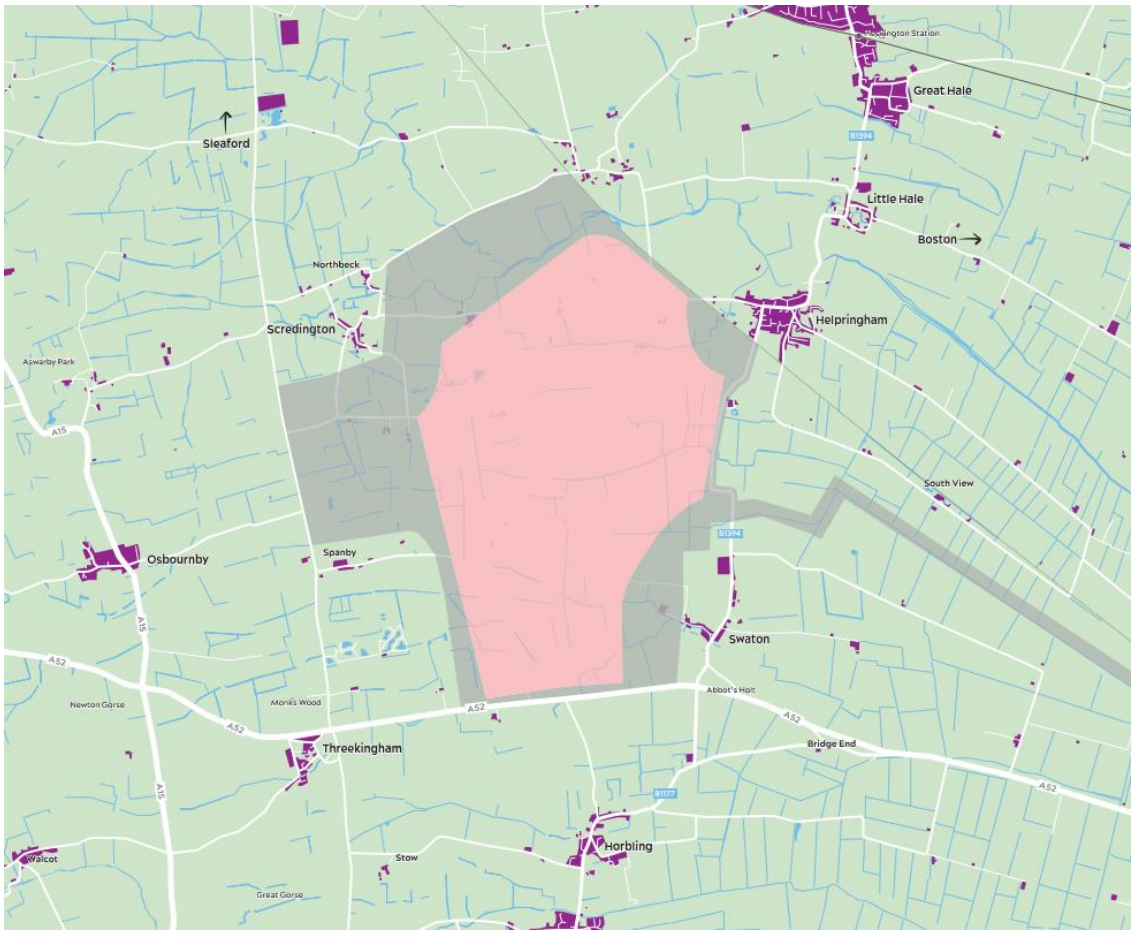
During the Stage 4 site selection process, having selected the most suitable polygons for the location of a reservoir and its embankments in the previous stages, preliminary consideration of the land requirements for this additional development took place. The project team concluded that, when compared to the size, complexity and geological sensitivity of the reservoir and its embankments, locating this supporting development in proximity to the polygons shortlisted at Stage 4 would not impact on the site selection conclusions.

It was nonetheless recognised that the minimisation of the potential impacts of the supporting features could be achieved through further engagement with local communities, homeowners, landowners and other local stakeholders. It was recognised that flexibility in the layout of the reservoir design and the associated development would be required to do this. Rather than present local communities and other stakeholders with a fixed design and land take, with minimal scope for variation, it was decided by the project team that public consultation and flexibility would be best delivered by presenting a preliminary indication of the area around the reservoir Polygon where associated development had the potential to be located. Figure 5

It should also be noted that this wider area doesn't incorporate infrastructure associated with the transfer of raw water to the reservoir, or the transfer of water from the reservoir to public water supply network. Again, the details of these transfers will be subject to further work, the outcomes of which will be subject to consultation and engagement.

The central pink area in Figure 5 depicts Polygon D, as described in Stage 4. The surrounding grey area depicts the area proposed for associated development, discussed above.

Figure 5: Preliminary site boundary for South Lincolnshire Reservoir and associated development



Appendix A – Site Selection Criteria

The criteria applied during the site selection process have been grouped into five categories. Table 1 lists the aspects that were considered during the different stages of the site selection process explained in chapters 2 and 3 to inform the best performing polygon.

Table 1: Aspects considered against the respective criteria during site selection

Category	Criterion	Aspects considered
Community	Flood risk	<ul style="list-style-type: none"> Flood zones Tidal flood risk Fluvial and surface water flood risk Residual risk from flood defence breach or overtopping Risk from other reservoirs Breach of the reservoir embankment Emergency drawdown
	Land grade and soils	<ul style="list-style-type: none"> Agricultural land classification Soil types, including peat Historic and authorised landfills Active and closed mining sites Unexploded ordinance
	Property and businesses	<ul style="list-style-type: none"> Existing land use (residential, agricultural or non-agricultural businesses) Land and property requirements of both construction and operation in terms of land take (temporary and permanent) Access to community receptors (private property, business, community facilities and areas of open space or recreation) Compulsory acquisition impacts from land referencing
	Traffic and transport	<ul style="list-style-type: none"> Road network, including Strategic Road Network Public transport Construction HGV traffic Public Rights of Way Rail and River Transport Access and transport routes (potential impact on villages) Major utilities infrastructure
Cost and Technical	Ground condition risk	<ul style="list-style-type: none"> Bedrock geology and faulting Superficial geology (type and thickness) Hydraulic failure due to uplift
	Whole life costs	<ul style="list-style-type: none"> Capital (current methods of construction) Operational (dominated by water pumping) Whole life costs
Environmental	Air quality	<ul style="list-style-type: none"> Air Quality Management Areas Receptors likely to be impacted during construction (domestic properties)
	Carbon emissions	<ul style="list-style-type: none"> Capital carbon (earth works and haulage) Operation carbon (water pumping) Whole life carbon Carbon sequestration – peat soils

Category	Criterion	Aspects considered
	Historic environment	<ul style="list-style-type: none"> • Conservation Areas • Registered Parks and Gardens • Registered Battlefields • World Heritage Sites • Scheduled Monuments • Listed Buildings • Non-designated heritage assets • Archaeology and geoarchaeology
	Landscape character and visual amenity	<ul style="list-style-type: none"> • Designated landscapes, including <ul style="list-style-type: none"> ○ Areas of Outstanding Natural Beauty ○ National Parks • Valued landscape features and elements • Designated views • Visual receptors
	Nature conservation and biodiversity	<ul style="list-style-type: none"> • Designated sites, including, <ul style="list-style-type: none"> ○ Special Areas of Conservation and Possible Special Areas of Conservation. ○ Special Protection Areas and Potential Special Protection Areas ○ Ramsar ○ Sites of Special Scientific Interest and their impact risk zones. ○ Important Bird Areas ○ Local Wildlife Sites ○ County Wildlife Sites ○ Local Geological Sites ○ Local Nature Reserves ○ National Nature Reserves • Priority habitats • Ancient Woodland • Other habitats • Protected species • Natural capital and ecosystem services • Conservation targets (conserve, restore and establish)
	Noise	<ul style="list-style-type: none"> • Receptors likely to be impacted during construction (domestic properties)
	Water quality (WFD assessment)	<ul style="list-style-type: none"> • WFD Level 2 assessment • Groundwater and surface water quality • Groundwater Source Protection Zones • Statutory main rivers
Planning	Relationship with land designated for planning purposes	<ul style="list-style-type: none"> • Local plan land use allocation • Neighbourhood Plans • Nationally significant infrastructure projects • Major development proposals • Green Belt • Green infrastructure plans • Safeguarded land (minerals, airfields) • Town and village greens • Designated common land
Potential benefits	Agricultural benefits	<ul style="list-style-type: none"> • Soil resources and Agricultural Land Classification • Farming (organic, regenerative) • Horticulture

Category	Criterion	Aspects considered
		<ul style="list-style-type: none"> • Water abstraction
	Biodiversity and environmental benefits	<ul style="list-style-type: none"> • Biodiversity net gain • Nature Recovery network • Habitat connectivity and corridors • Country/environmental stewardship schemes • Conservation targets (conserve, restore and establish) • Existing schemes and local landowner involvement • Royal Society for the Protection of Birds reserves
	Flood risk benefits	<ul style="list-style-type: none"> • Surface water storage • Wetland restoration/creation • Local landowner involvement • Enhancement of existing schemes • Watercourse restoration • Floodplain reconnection and storage by embankment removal
	Landscape and heritage benefits	<ul style="list-style-type: none"> • Enhancing landscape • Enhancing access and interpretation of landscapes and heritage • Preserving historic environment information • Connecting local communities with their heritage
	Socio-economic benefits	<ul style="list-style-type: none"> • Sustainable transport • Active travel • Recreation/tourism • Connecting people with nature • Local employment • Local green space • Environmental education

Appendix B – Stage 4 Location Plans

Figure B1: Polygon A Location Plan

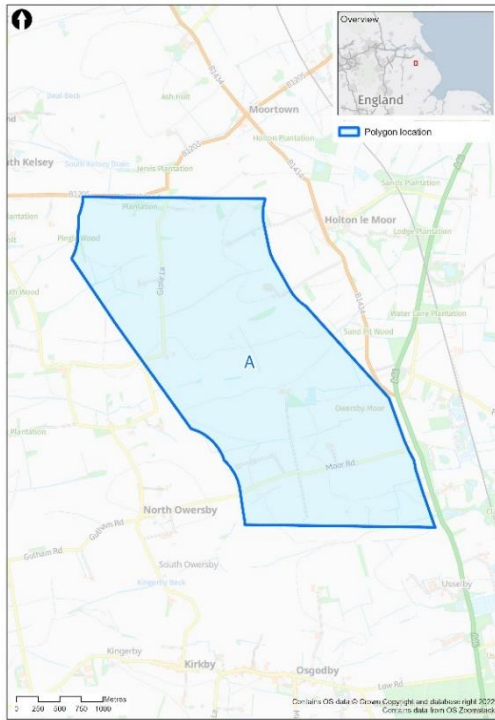


Figure B2: Polygon B Location Plan

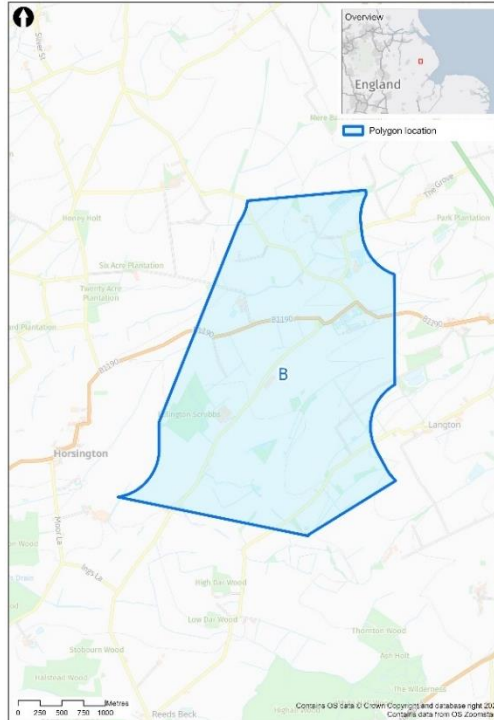


Figure B3: Polygon C Location Plan

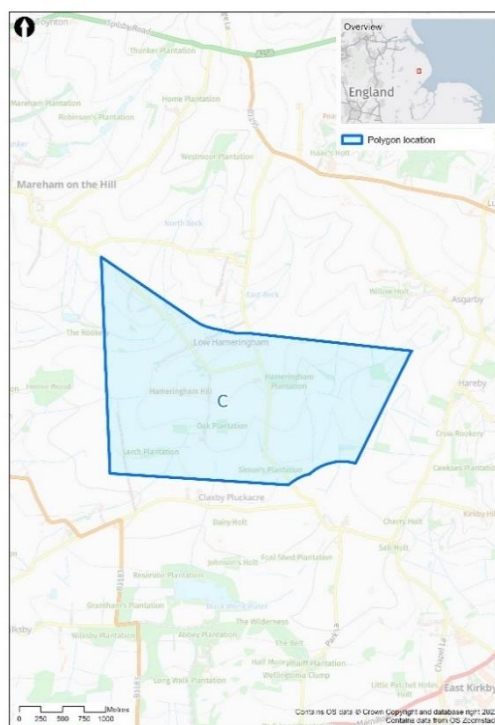
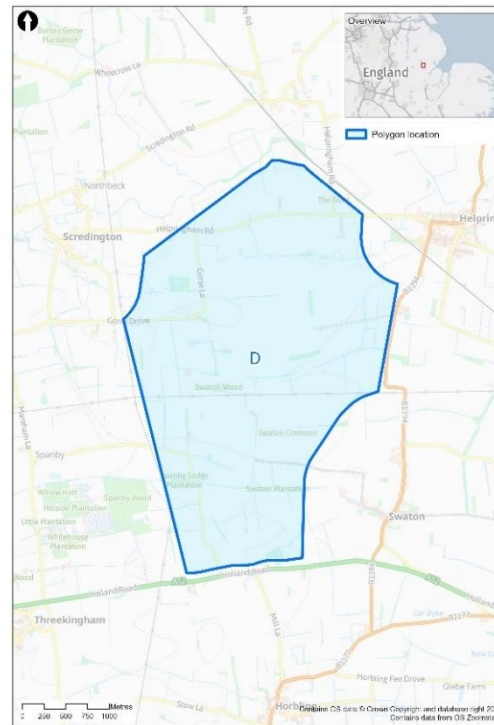


Figure B4: Polygon D Location Plan



Appendix C – Stage 4 Appraisal Summary

Table 2: Stage 4 appraisal summary of distinguishing Polygon features

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
Community	Flood risk	Requires the diversion of a single flow path to manage flood risk, which may potentially need to be provided as a tunnel below the reservoir.	Requires open channel diversion of three flow paths to manage flood risk.	Requires open channel diversion of four flow paths to manage flood risk.	Requires diversion of two flow paths to manage flood risk, which may potentially need to be provided as a tunnel below the reservoir.
	Land grade and soils	Loss of predominantly Grade 3a (good) best and most versatile (BMV) agricultural land.	Loss of both Grade 2 (very good) and Grade 3a (good) BMV agricultural land.	Loss of both Grade 2 (very good) and Grade 3a (good) BMV agricultural land. The only Polygon with generally well-drained soils, favouring crop production.	Loss of predominantly Grade 3a (good) BMV agricultural land.
	Property and businesses	Direct impact/ loss of 16 residential properties, with no impact upon non-agricultural businesses anticipated.	Loss of 28 residential properties and impact the viability of five non-agricultural businesses including kennels, catteries and storage facilities.	Loss of 17 residential properties, with no impact upon non-agricultural businesses anticipated.	Loss of 15 residential properties and impact the viability of two non-agricultural businesses including construction services.
		Total land take of around 12 agricultural holdings, impacting the viability of a further 15 agricultural holdings.	Total land take of around nine agricultural holdings, impacting the viability of a further 12 agricultural holdings.	Total land take of around 14 agricultural holdings, impacting the viability of a further 13 agricultural holdings.	Total land take of around eight agricultural holdings, impacting the viability of a further 13 agricultural holdings.
Traffic and transport	Good road transport links from the A46, with access to the Polygon from the north by the B1205.	Good road transport links to access the polygon, likely to be from the A158.	Access to the Polygon would be either from the A158 in the north or A155 in the south. Requires the use of various local roads and could result in substantial disruption to communities during construction.	Easily accessible from the A52, which provides good road transport links during construction.	
	Loss of minor local roads including Moor Road, Gipsy Lane and Cater Lane.	Loss of minor local roads, requiring realignment of the B1190 Thimbleby Hill Road linking Horsington and Thimbleby.	Loss of several rural unclassified roads.	Loss of minor local roads, requiring realignment of Station Road, Helpingham Road and Screddington Road.	

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		Requires realignment of two Public Rights of Way (PRoW).	Severance of six PRoWs. One footpath is routed directly through the centre of the Polygon and would require a lengthy diversion and a short section of Bridleway would be lost.	Requires realignment of four PRoWs.	Requires realignment of seven PRoW.
		Approximately 60 to 70 heavy goods vehicles (HGV) per day could be required for construction related materials delivery, based on initial estimates.	Approximately 60 to 70 HGVs per day could be required for construction related materials delivery, based on initial estimates.	Approximately 60 to 70 HGVs per day could be required for construction related materials delivery, based on initial estimates. However, a significant number of additional HGVs would be required to remove excess spoil from site for disposal during the earthworks.	Approximately 60 to 70 HGVs per day could be required for construction related materials delivery, based on initial estimates.
Cost and technical	Ground condition risk	Underlain by Kimmeridge Clay and Ampthill Clay, suitable for founding material and embankment construction material. A cut-fill balance could be achieved relatively easily, with an average superficial layer thickness of 2.4m. Higher quality Glacial Till with a reuse potential for construction and landscaping of approximately 85%. Very low risk of hydraulic uplift.	Underlain by Kimmeridge Clay and Ampthill Clay, suitable for founding material and embankment construction material. A cut-fill balance could be achieved relatively easily, with an average superficial layer thickness of 16m. Poor quality Glacial Till with a reuse potential for construction and landscaping of approximately 50%. Very low risk of hydraulic uplift.	Underlain by Kimmeridge Clay, suitable for founding material and embankment construction material. A cut-fill balance would be difficult to achieve, with an average superficial layer thickness of 7.3m. Poor quality Glacial Till with a reuse potential for construction and landscaping of approximately 50%. Very low risk of hydraulic uplift.	Underlain by Oxford Clay, suitable for founding material and embankment construction material. A cut-fill balance could be achieved relatively easily, with an average superficial layer thickness of 2.6m. Higher quality Glacial Till with a reuse potential for construction and landscaping of approximately 90%. Low risk of hydraulic uplift towards the narrow southern end of the polygon.
	Whole life cost	Second lowest whole life cost at an estimated £1,360 million Net Present Value (NPV) (based on core scope before risk and early development phase contingency are applied). Estimate reflects the ease of achieving a cut-fill balance and costs associated with water	Second highest whole life cost at an estimated £2,480 million NPV (based on core scope before risk and early development phase contingency are applied). Estimate reflects the relative ease of achieving a cut-fill balance and costs associated with water pumping requirements during operation.	Highest whole life cost at an estimated £3,470 million NPV (based on core scope before risk and early development phase contingency are applied). Estimate reflects the difficulty of achieving a cut-fill balance and costs associated with water pumping requirements during operation.	Lowest whole life cost at an estimated £1,160 million NPV (based on core scope before risk and early development phase contingency are applied). Estimate reflects the ease of achieving a cut-fill balance and costs associated with water pumping requirements during operation.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		pumping requirements during operation.			
Environmental	Air quality	Not a distinguishing factor.			
	Carbon emissions	Estimated 545 ktCO ₂ e during construction and circa 40 ktCO ₂ e/year during operation, with a whole life carbon NPV cost estimated at £250 million.	Estimated 620 ktCO ₂ e of during construction and circa. 30 ktCO ₂ e/year during operation, with a whole life carbon NPV cost estimated at £250 million.	Estimated 610 ktCO ₂ e of during construction and circa. 38 ktCO ₂ e/year during operation, with a whole life carbon NPV cost estimated at £240 million.	Estimated 310 ktCO ₂ e during construction and circa. 26 ktCO ₂ e/year during operation, with a whole-life carbon NPV cost estimated at £170 million.
	Historic environment	<p>21 designated assets identified within 1km and 26 non-designated historic environment assets within the polygon.</p> <p>Would result in 'substantial harm' to heritage assets as it would result in the loss of high value, Grade II listed 'Yewfield Farm Cottages at Yewfield Farm'.</p> <p>Potential to result in 'less than substantial harm' as it could impact the setting of the Grade II 'Thornton House' and other Grade II listed buildings in North and South Owersby.</p>	<p>19 designated assets identified within 1km and 23 non-designated historic environment assets within the polygon.</p> <p>Potential to result in 'substantial harm' to a heritage asset as it could have an adverse impact on the high value Scheduled Monument 'Wood Hall moated site', located directly adjacent on the southern boundary of the polygon; and would result in the loss of the Neolithic Long Barrow under consideration by Historic England for designation as a Scheduled Monument.</p> <p>Potential to result in 'less than substantial harm' as it could alter the setting of the Grade II listed 'Ruined chapel at Poolham Hall' and other Grade II buildings in the area.</p>	<p>Eight designated assets identified within 1km and 20 non-designated historic environment assets within the polygon.</p> <p>No 'substantial harm' anticipated.</p> <p>Potential to result in 'less than substantial harm' as it could impact upon the setting of the high value Registered Battlefield of 'Battle of Winceby 1643', the Grade II Registered Park and Garden of 'Scrivelsby Court', and the Grade II* Listed Church of All Saints in Mareham on the Hill.</p>	<p>19 designated assets identified within 1km and 17 non-designated historic environment assets within the polygon.</p> <p>Potential to result in 'substantial harm' to a heritage asset as it could have a moderate adverse impact on the significance of the Scheduled Monument, Thorpe Latimer, on the eastern boundary, due to the introduction of reservoir embankments. The loss of medieval ridge and furrow with which it has group value and forms a positive contribution to the significance of the asset will reduce the ability for it to be understood in its historic context.</p> <p>Potential to result in 'less than substantial harm' as it could result in the loss of a wide area of rural agricultural land with historic views including the spires of Grade I and II Listed churches within the surrounding settlements. The loss of this landscape would result in an impact upon the significance of these churches.</p>
	Landscape character and visual amenity	Average embankment height would be 10.9m relative to the mean site elevation at 25.9 metres Above	Average embankment height would be 10.3m relative to the mean site elevation at 23.8mAOD with a crest	Average embankment height would be 13m relative to the mean site elevation at 69.1mAOD with a crest	Average embankment height would be 9.5m relative to the mean site elevation at 12.7mAOD with a crest

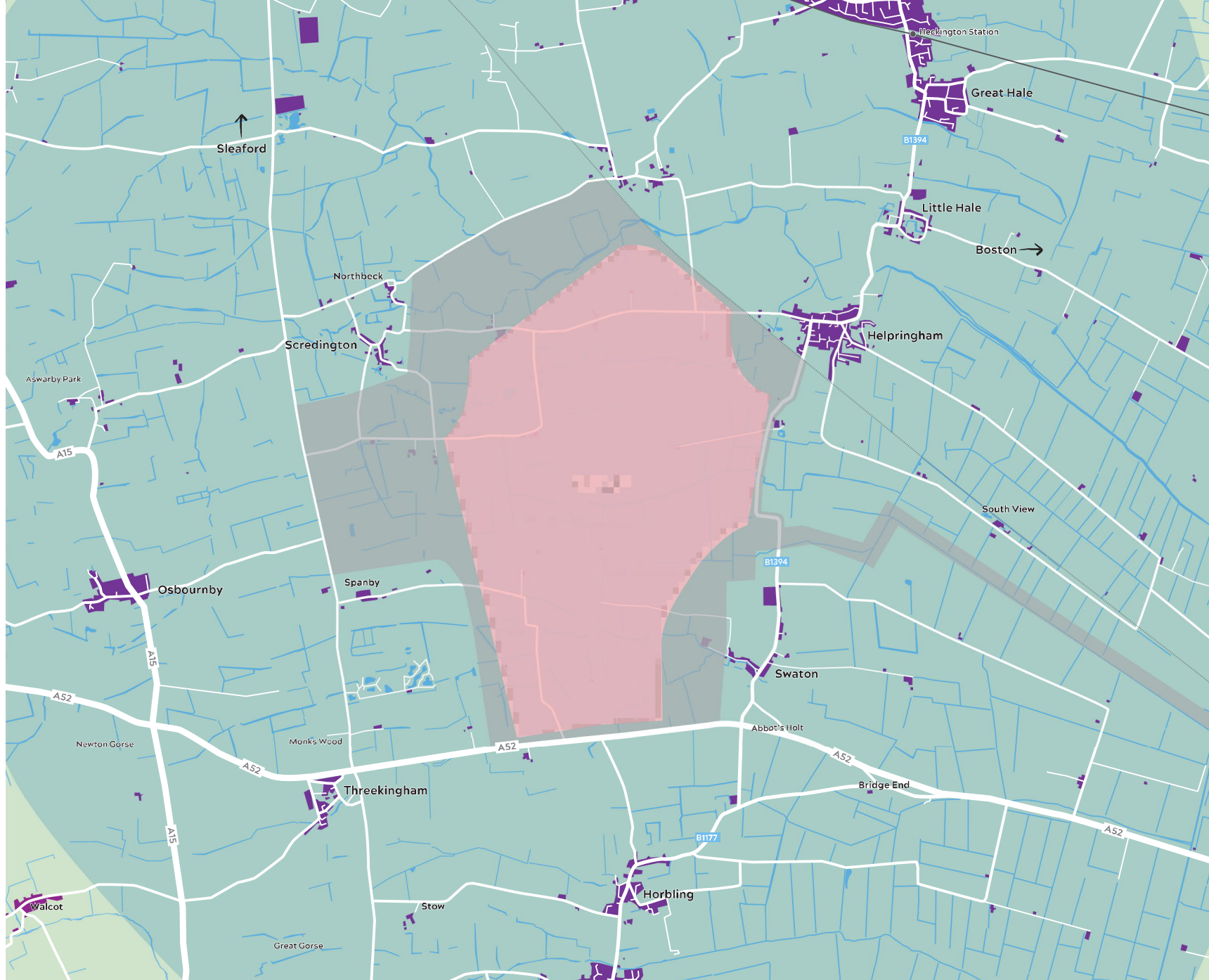
Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		Ordnance Datum (mAOD) with a crest elevation of 36.8mAOD, based on preliminary calculations.	elevation of 34.1mAOD, based on preliminary calculations.	elevation of 82.1mAOD, based on preliminary calculations.	elevation of 22.2mAOD, based on preliminary calculations.
		The maximum embankment height relative to ground level would be approximately 28m.	The maximum embankment height relative to ground level would be approximately 26m.	The maximum embankment height relative to ground level would be approximately 43m.	The maximum embankment height relative to ground level would be approximately 18m.
		Likely to have a substantial impact on the 'special qualities' of the Lincolnshire Wolds AONB, including views from the scarp, its scenic beauty and rural charm.	Potential impacts on long distance views to Lincoln Cathedral and pastoral views to church spires for settlements to the west and south of the polygon, including Horsington, Wispington and Old Woodhall.	Likely to have an impact on the 'special qualities' of the AONB as it is located 3km south of the AONB and could be visible from the Wold escarpment.	Potential impact on landscape features on the edge of the Fens, with no potential impact anticipated upon the AONB given the distance from the Wold escarpment.
	Nature conservation and biodiversity	Total loss of Thornton le Moor Road Verges Local Wildlife Site (LWS).	Total loss of Edington Scrubbs LWS.	Total or partial loss of Hameringham Hill Road Verges LWS, East Beck LWS, Scrivelsby Beck LWS and Glebe Farm Verges LWS.	The lowest number (three) of LWS within 2km.
		Loss of 3ha broadleaved deciduous woodland, a Priority Habitat, with potential to indirectly affect a further 33 pockets of broadleaved deciduous woodland within 1km.	Loss of 7ha broadleaved deciduous woodland.	Loss of 13ha broadleaved deciduous woodland. Could have an indirect effect upon Home Wood, an Ancient Woodland, located 230m east of Polygon C.	Loss of 6ha broadleaved deciduous woodland
		Not in close proximity to Ancient Woodland.	Potential indirect effect on High Dar Wood and Horsington Wood, pockets of Ancient Woodland located 550m south and 790m west respectively.	Not in close proximity to Ancient Woodland.	Not in close proximity to Ancient Woodland.
		Likely to have a major adverse impact on achieving local conservation objectives.	Potential moderate adverse impact on achieving local conservation objectives.	Likely to have the most adverse impact on achieving local conservation objectives.	Potentially the least adverse impact on achieving local conservation objectives.
	Noise	Not a distinguishing factor.			
	Water quality (WFD assessment)	Potential Regulation 19 derogation on Thornton and Owersby Catchwater and Kingerby Beck Catchment (tributary of Ancholme),	Potential Regulation 19 derogation as there could be deterioration to man-made and natural	Potential Regulation 19 derogation as there could be deterioration to both Haltham Beck and Scrivelsby Beck.	Potential Regulation 19 derogation on Swaton Drains, due to reduction in flow and loss of the open channel running through the polygon.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		due to reduction in flow and loss of the open channel running through the polygon. Potential loss of approximately 101km open watercourses due to the high number of existing open drains present within the polygon.	watercourses (WFD catchment – Bucknall catchwater). Potential loss of approximately 22km of open watercourses due to open drains within the polygon.	Potential loss of approximately 50km open watercourses due to open drains within the polygon.	Potential loss of approximately 44km open watercourses due to the high number of open drains within the polygon.
Planning	Relationship with land designated for planning purposes	Close to important open spaces in South Kelsey and 'The Swares' in Kirby. Located within the 'Middle Rasen Unwood Vale' Green Infrastructure Zone. The only Polygon within a Neighbourhood Planning Area (NPA), namely the Osgodby NPA. Located within 2km of an unlicensed airstrip, with risk of bird strike. No existing planning permissions for development within the Polygon boundary that would be adversely impacted. There is major utility infrastructure within the polygon.	There are no Common Land, open or green spaces in proximity to the polygon. There is no designated green infrastructure within the Polygon or nearby. Not located within a NPA. Although all polygons are within the bird strike hazard zone of RAF airfield or licenced airfield, this is the only Polygon located outside the bird strike hazard zone (12.87km) of an unlicensed airstrip. Likely to adversely impact the existing planning permission for development of a covered digestate storage lagoon, perimeter bunding and fencing and concrete apron for the storage of silage within the polygon, related to an existing farm northeast of the polygon. There is major utility infrastructure within the polygon.	Loss of a small area of Common Land (land in the parish of Hameringham). There is no designated green infrastructure within the Polygon or nearby. Not located within a NPA. Located within 4km of an unlicensed airstrip, with risk of bird strike. There are no existing planning permissions for development within the Polygon boundary that would be adversely impacted. There is major utility infrastructure within the polygon.	Close proximity to important open spaces in Screddington, Helpinham and Swaton. Located within the 'Southeast Sleaford Fringe Fen and Marsh Maring Farmlands' Green Infrastructure Zone. Not located within a NPA. Located within 6km of an unlicensed airstrip, with risk of bird strike. There is planning permission for the development of an Environment Agency Natural Flood Management Attenuation Area including attenuation ponds, swales and headwalls, minor realignment of watercourse, regrading of land and alterations to access track located southwest of the polygon. There is major utility infrastructure within the polygon, requiring diversion of existing overhead power lines.

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
Potential benefits	Agricultural benefits	Not a distinguishing factor.			
	Biodiversity and environmental benefits	<p>Extensive areas of Nature Recovery Network (NRN) to connect in to, to the east toward Claxtby and Nettleton (wolds habitat), south towards Osgodby, and west towards the Kingerby Beck and North Gulham/Thornton Le Moor area (fenland habitats).</p> <p>Opportunity for habitat improvement to Kingerby Beck watercourse.</p> <p>Good opportunity to contribute to achieving regional Conservation Targets.</p>	<p>Opportunity to connect to NRN areas to the south, based around Woodhall Spa, Roughton Moor and further to the south.</p> <p>Opportunity to connect several plantation woodlands, including Horsington Wood, Stixwould Wood, Halstead and Stobourn Wood, Low Dar Wood and Glen Lodge Meadows.</p> <p>Opportunity to contribute to achieving Conservation Targets at a local and regional level.</p>	<p>Opportunity to connect to NRN areas to the west, along the Scrivelsby Beck and Haltham Beck; and extensive NRN areas north of Asgarby to Snipes Dale and even further to River Lymn.</p> <p>Opportunity to increase area of the nature reserve at Upper Sow Dale to reduce edge effects and provide more habitats.</p> <p>Greatest opportunity to contribute to Conservation Targets at a local level.</p>	<p>Opportunity to connect with the NRN areas associated with Swaton Eau and North Beck watercourses and Helpringham.</p> <p>Opportunity to improve environmental corridors, including the Boston to Peterborough Wetland Corridor, Swaton Fen and Bourne-Seafood Corridor.</p> <p>Opportunity to enhance river corridors through riparian woodland along the upper reaches North Beck.</p> <p>Opportunity to link with country stewardship schemes (highest uptake of the scheme in the surrounding area).</p> <p>Good opportunity to contribute to achieving regional Conservation Targets.</p>
	Flood risk benefits	<p>Provides good opportunity for flood risk benefits, particularly in the Ancholme catchments.</p> <p>Likely to provide opportunity to avoid flood risk impacts to Owersby Catchment Drain.</p> <p>Flood risk benefits could include new washlands for water storage at Snitterby Carr to reduce pressure on Ancholme defences.</p> <p>Co-benefits to reducing flood risk through these initiatives would include biodiversity net gain at Kingerby Beck Meadows and carbon sequestration.</p>	<p>Limited opportunity to provide flood risk benefits, although could provide opportunity to restore the historic wetland near Martin Dales for water storage.</p> <p>Opportunity to connect to the Witham via Duckppol catchwater (use of wetlands in a pooling zone near Stixwould).</p>	<p>Location is relatively remote from the Lower Witham floodplain, implying flood risk interventions in this location would likely not have significant benefit upon downstream flood risk.</p> <p>Opportunity to restore the Bain navigation, by tying into the River Bain and reconnecting the floodplain to the River Bain to provide flood risk benefits to Horncastle and Lower Witham.</p> <p>Relatively few receptors would benefit from additional flood risk</p>	<p>Opportunity to provide flood risk benefits to a number of communities including Screddington, Spanby, Swaton and Helpringham. Including surface water storage flood risk.</p> <p>Potential to reduce or avoid flood risk impacts on Swaton Eau and offer Natural Flood Management opportunities</p> <p>Opportunity to connect with the Environment Agency's Swaton Natural Flood Management scheme.</p>

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
				interventions owing to the low population density in the floodplain.	
	Landscape and heritage benefits	Not a distinguishing factor.			
	Socio-economic benefits	<p>Good surrounding road links and nearby railway (Market Rasen train station) would provide a good opportunity for the reservoir to become a regional attraction, with opportunities to encourage sustainable travel to and from the reservoir.</p> <p>Some opportunity for river transport within 5km of the boundary.</p> <p>Opportunity to promote active travel and lifestyles through connecting with the National Cycle Network (NCN) 5km southwest of the polygon.</p> <p>Potential to be a gateway to the Wolds with connectivity to Ancholme, in an area already well recognised as a destination with the Market Rasen Racecourse nearby.</p> <p>Low number of educational facilities within 5km of the polygon, providing some opportunity for environmental education and field trips.</p>	<p>Good surrounding road links but nearest railway (Thorpe Culvert train station) approximately 15km away, which presents less of an opportunity to promote sustainable travel to and from the reservoir.</p> <p>Opportunity for river transport within 5km of the boundary. Including opportunity to enhance the Bain navigation which could be used for transport of construction materials.</p> <p>Some opportunity to promote active travel and lifestyles through connecting with the NCN approximately 5km west of the polygon. Opportunity for cycling and pedestrian routes from Woodland Spa.</p> <p>Opportunity to enhance existing tourist destinations owing to its proximity to Woodland Spa.</p> <p>Highest number of educational facilities within 5km of the polygon, providing the best opportunity for environmental education and field trips.</p>	<p>Nearest railway station approximately 15km away, which presents the lowest opportunity to promote sustainable travel to and from the reservoir.</p> <p>Limited opportunity for river transport.</p> <p>Limited opportunity to promote active travel.</p> <p>Limited opportunity for recreation and tourism as the area offers a wide range of existing recreational and tourism facilities in the region, including Tattershall and Snipe Dales.</p> <p>Low number of educational facilities within 5km of the polygon, providing some opportunity for environmental education and field trips.</p>	<p>Good surrounding road links and nearby railway (Sleaford and Heckington train stations) would provide a good opportunity for the reservoir to become a regional attraction, with opportunities to encourage sustainable travel to and from the reservoir.</p> <p>Opportunity for river transport within 5km of the boundary. Potential to provide open channel connectivity associated with the South Forty Foot Drain, in support of water sharing, flood management and potential navigational benefits</p> <p>Opportunity to promote active travel and lifestyles through connecting with the NCN 7km north of the polygon.</p> <p>Potential to provide leisure opportunities owing to proximity to Sleaford, Spalding and Boston.</p> <p>Least number of educational facilities within 5km of the polygon, providing less opportunity for environmental education and field trips.</p>

Criteria group	Criterion	Polygon A	Polygon B	Polygon C	Polygon D
		Least number of people living within 5km of the boundary, thereby presenting the worst opportunity for the reservoir to benefit local communities in social, economic and other terms.	Highest number of people living within 5km of the boundary, thereby presenting the best opportunity for the reservoir to benefit local communities in social, economic and other terms.	Moderate number of people living within 5km of the boundary, thereby presenting some opportunity for the reservoir to benefit local communities in social, economic and other terms.	Moderate number of people living within 5km of the boundary, thereby presenting some opportunity for the reservoir to benefit local communities in social, economic and other terms.



Key:

- Proposed site area for reservoir and its embankment
- Initial area for supporting infrastructure, construction and additional measures

Telephone: [REDACTED] (9am - 1pm Mon, Wed, Fri)
Email: planningcontrol@peterborough.gov.uk
Case Officer: Miss Molly Hood
Our Ref: 23/00905/CONSUL
Your Ref:

PETERBOROUGH



Planning Services

Sand Martin House
Bittern Way
Fletton Quays
Peterborough
PE2 8TY

The Planning Inspectorate
Environmental Services
Operations Group 3
Temple Quay House
2 The Square
Bristol
BS1 6PN

Peterborough Direct: 01733 747474

15 May 2023

Dear Sir/Madam

Planning enquiry

Proposal: Consultation on scoping opinion for Order granting Development Consent for the Beacon Fen Energy Park

Site address: Beacon Fen Energy Park

Your client: Beacon Fen Energy Park Ltd

Further to your enquiry received on 20 April 2023, in respect of the above, the Local Planning Authority makes the following comments:

The proposal site is remote from Peterborough and therefore we do not have any comments to make on this scoping opinion.

I trust that the above advice is of use however should you have any further queries, please do not hesitate to contact me on the details shown at the top of this letter.

Yours faithfully

Miss Molly Hood
Senior Development Management Officer



UK Health
Security
Agency

Environmental Hazards and Emergencies Department
Seaton House, City Link
London Road
Nottingham, NG2 4LA

nsipconsultations@ukhsa.gov.uk
www.gov.uk/ukhsa

Your Ref: EN010151-000008
Our Ref: 63358 CIRIS

Mr Todd Brumwell
EIA Advisor, The Planning Inspectorate
Temple Quay House
2 The Square
Bristol, BS1 6PN

12 May 2023

Dear Mr Brumwell,

**Nationally Significant Infrastructure Project
Beacon Fen Energy Park Limited [PINS Reference EN010151]
Scoping Consultation Stage**

Thank you for including the UK Health Security Agency (UKHSA) in the scoping consultation phase of the above application. ***Please note that we request views from the Office for Health Improvement and Disparities (OHID) and the response provided below is sent on behalf of both UKHSA and OHID.*** The response is impartial and independent.

The health of an individual or a population is the result of a complex interaction of a wide range of different determinants of health, from an individual's genetic make-up to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. All developments will have some effect on the determinants of health, which in turn will influence the health and wellbeing of the general population, vulnerable groups and individual people. Although assessing impacts on health beyond direct effects from for example emissions to air or road traffic incidents is complex, there is a need to ensure a proportionate assessment focused on an application's significant effects.

Having considered the submitted scoping report we wish to make the following specific comments and recommendations:

Environmental Public Health

We understand that the promoter will wish to avoid unnecessary duplication and that many issues including air quality, emissions to water, waste, contaminated land etc. will be covered elsewhere in the Environmental Statement. We believe the summation of relevant issues into a specific section of the report provides a focus which ensures that public health

is given adequate consideration. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.

In terms of the level of detail to be included in an ES, we recognise that the differing nature of projects is such that their impacts will vary. UKHSA and OHID's predecessor organisation Public Health England produced an advice document *Advice on the content of Environmental Statements accompanying an application under the NSIP Regime*¹, setting out aspects to be addressed within the Environmental Statement¹. This advice document and its recommendations are still valid and should be considered when preparing an ES. Please note that where impacts relating to health and/or further assessments are scoped out, promoters should fully explain and justify this within the submitted documentation.

We note that the Applicant has proposed to screen out from the ES the assessment of the potential impacts of the Proposed Development on air quality, land contamination, waste, major accidents, and disasters.

We understand that aspects related to air quality impacts are considered in relation to the local ambient conditions within the vicinity of the Site boundaries. It is to note, however, that in the documentation provided, the Applicant does not include the predicted concentrations of background PM_{2.5}.

In relation to major accidents and disasters, human receptors, as opposed to environmental receptors, are not clearly referenced within the mitigation measures and risk assessment considerations of the Proposed Development.

Recommendation

We recommend the Applicant includes the background levels of PM_{2.5} for completeness and to ascertain their conclusions. Our position is that pollutants associated with road traffic or combustion, particularly particulate matter and oxides of nitrogen are non-threshold; i.e, an exposed population is likely to be subject to potential harm at any level and that reducing public exposure to non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure) and maximise co-benefits (such as physical exercise). We

¹
<https://khub.net/documents/135939561/390856715/Advice+on+the+content+of+environmental+statements+accompanying+an+application+under+the+Nationally+Significant+Infrastructure+Planning+Regime.pdf/a86b5521-46cc-98e4-4cad-f81a6c58f2e2?t=1615998516658>

encourage their consideration during development design, environmental and health impact assessment, and development consent.

In relation to major accidents and disasters, we recommend ensuring that human receptors are taken into consideration when designing the mitigation and management of the risks for the Proposed Development and that ultimately the likelihood of major accidents and disasters is considered to be low in connection to public health.

Electric and Magnetic Fields

Recommendation

We request the proposer confirms either that the proposed development does not impact any receptors from potential sources of EMF; or ensure that an adequate assessment of the possible impacts is undertaken and included in the ES. For more information, see *Advice on the Content of Environmental Statements accompanying an application under the NSIP Regime*¹.

Human Health and Wellbeing - OHID

This section of OHID's response, identifies the wider determinants of health and wellbeing we expect the ES to address, to demonstrate whether they are likely to give rise to significant effects. OHID has focused its approach on scoping determinants of health and wellbeing under four themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. The four themes are:

- Access
- Traffic and Transport
- Socio-economic
- Land Use

Having considered the submitted scoping report OHID does not have further comments.

Yours sincerely,

On behalf of UK Health Security Agency
nsipconsultations@ukhsa.gov.uk

Please mark any correspondence for the attention of National Infrastructure Planning Administration.



Guildhall
Marshall's Yard
Gainsborough
Lincolnshire DN21 2NA

Telephone 01427 676676
Web www.west-lindsey.gov.uk

Your contact for this matter is:
Danielle Peck

[REDACTED]

15 May 2023

The Planning Inspectorate
Environmental Services,
Central Operations
Temple Quay House
2 The Square
Bristol
BS1 6PN

Dear Sir/Madam,

APPLICATION REFERENCE NO: 146701

PROPOSAL: PINS consultation on behalf of the Secretary of State for its opinion (a scoping Opinion) as to the information to be provided in an Environmental Statement - EN010151

LOCATION: Beacon Fen Energy Park

Thank you for identifying West Lindsey District Council as a consultation body and advising that the Secretary of State will be preparing a Scoping Opinion on the information to be provided in an environmental statement (ES). As the case officer I have read through the Scoping Report (SR) by Wardell Armstrong dated April 2023 with Section 2 of the SR describing the proposed development including the different phases from construction to decommissioning. Overall it is consider that the SR to be well written and comprehensive.

The site is a large distance away from the closest West Lindsey District Council boundary, being approximately 18km from the most south east part of part of the District, beyond Southrey. The statutory development plan for the purposes of S38 (6) of the Planning and Compulsory Act 2004 is the Central Lincolnshire Local Plan 2023 which was formally adopted on 13th April 2023.

The Environmental Statement (ES) should consider National Planning Policy and Guidance as follows;

- National Planning Policy Framework (NPPF);
- National Planning Practice Guidance (NPPG) (to include):
 - Climate Change
 - Historic Environment
 - Environmental Impact Assessment
 - Light Pollution
 - Healthy and Safe Communities
 - Natural Environment

- Noise
 - Renewable and Low Carbon Energy
 - Travel Plans, Transport Assessments and Statements in Decision Taking
 - Water Supply Wastewater and Water Quality
- National Design Guide 2019
 - National Design Code 2021

Landscape and Visual Impact:

As set out in the SR the Landscape and Visual Impact Assessment (LVIA) should follow the guidance of the Landscape Institute "Guidelines for Landscape and Visual Impact Assessment 3rd Edition (2013), as proposed.

Given the height of the development it would not be expected to be in view from any parts of the West Lindsey District. Therefore it is not considered likely that any viewpoints from West Lindsey would be necessary and no residential properties in West Lindsey are expected to be affected.

Cumulative Impact

West Lindsey District Council which is part of the Central Lincolnshire Authorities along with North Kesteven District Council and City of Lincoln, is expecting four large scale solar projects (Nationally Significant Infrastructure) to be applied for through a Development Consent Order. These are:

- 600MW Cottam Solar Project

Proposed across 3 sites on land (1270Ha) in proximity of Sturton by Stow and Willingham by Stow, Corringham and Blyton. The Planning Inspectorate (PINS) confirmed on 9th February that this project has been accepted for examination.

- 500MW Gate Burton Solar Project

The development is proposed on a 684Ha site to the south of Gainsborough/Lea. It was accepted for examination on 22nd February.

- 480MW West Burton Solar Project

Proposed across 3 sites (788Ha) on land to the south of Sturton by Stow. The Planning Inspectorate have advised they received an application for a Development Consent Order (DCO) on 21st March. The application has been accepted for examination and is now in the pre examination stage, registration closes on Thursday 8th June.

- 500MW Tillbridge Solar Project

1400Ha site on land between Corringham and Glentworth. It is anticipated by PINS, that the developer will submit their application in Q4 2023. Before that, the developer will be required to advertise and undertake public consultation, which is anticipated they will hold around May/June 2023.

Whilst the structure of the ES appears to be generally acceptable it is imperative that any Environmental Impact Assessment clearly considers within its structure the cumulative effect of Beacon Fen Energy Park with these other solar farm projects and any other solar parks in the nearby area, such as Heckington Fen and Springwell Solar Farm, also within the North Kesteven District. There are questions as to how all these developments taken

together will affect Central Lincolnshire's character, as traditional rural Lincolnshire Countryside.

Yours faithfully

████████

Danielle Peck
Senior Development Management Officer
On behalf of West Lindsey District Council

If you require this letter in another format e.g. large print, please contact Customer Services on 01427 676676, by email customer.services@west-lindsey.gov.uk or by asking any of the Customer Services staff.

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