

Tween Bridge Solar Farm

Environmental Statement Chapter 8: Cultural Heritage and Archaeology

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms
and Procedure) Regulations 2009

APFP Regulation 5(2)(a)

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8. Cultural Heritage and Archaeology

8.1. Introduction

- 8.1.1. This chapter reports on the assessment of the likely significant effects of the Scheme on cultural heritage and archaeology within those areas of the Order Limits proposed for the construction of the solar PV modules, BESS facilities and associated infrastructure and within the surrounding Study Area.
- 8.1.2. The Study Area for non-designated archaeological assets used to inform this assessment includes all land within the Order Limits plus a 1km buffer surrounding them.
- 8.1.3. The Study Area for designated heritage assets and non-designated built heritage assets included all land within the Order Limits plus a 1km area surrounding them as well as all land within the screened Zone of Theoretical Visibility (sZTV).
- 8.1.4. The extent of the Study Areas detailed above was identified as appropriate to assess the potential impacts of the Scheme on the Cultural Heritage resource on the basis of professional judgment. The Study Areas implemented were agreed as being appropriate by stakeholders during the scoping process.
- 8.1.5. This chapter is supported by the following appendices and figures:
- **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision ~~3~~2]**
 - **Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092]**
 - **Appendix 8.3 Geoarchaeological Assessment [~~Document Reference 6.3.8.3 Revision 2~~REP2-043]**
 - **Appendix 8.4 Trial Trenching Report [APP-094]**
 - **Appendix 8.5 Test Pitting Report [APP-095]**

- Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision ~~3~~2]
- Figure 8.1 Designated Heritage Assets [~~REP2-058~~Document Reference 6.4.8.1 Revision 2]
- Figure 8.2 Non-Designated Heritage Assets [APP-152]
- Figure 8.3 Important Hedgerows (Heritage) [APP-153]

8.2. Consultation

- 8.2.1. On 13 March 2023 the Planning Inspectorate issued a Scoping Opinion. A working draft of the Preliminary Environmental Information Report (“PEIR”) was issued as part of the non-statutory consultation undertaken between 4 October 2023 and 29 November 2023. The extent of the Draft Order Limits used as the basis for assessment during both the non-statutory and statutory consultations differed to the final Order Limits that form the basis of this assessment. The non-statutory consultation included a PEIR and responses were received from the Local Planning Authorities (North Lincolnshire, Lincolnshire, South Yorkshire Archaeology Service on behalf of City of Doncaster Council) and Historic England. These responses have been taken into account during the preparation of this chapter and this is discussed in detail below. This chapter includes further sources of information highlighted by the consultees and the results of further surveys which have been undertaken since the non-statutory consultation was completed. The formal PEIR was produced to support the statutory consultation in March 2025.
- 8.2.2. A summary of general consultation liaison and responses received to date is provided in **Table 8-1**.

Table 8-1: Summary of General Consultation

Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Geophysical Survey		
Historic Environment Officer, North Lincolnshire Council (13 March 2023)	Scope of geophysical survey should encompass the whole land take within North Lincolnshire as there has only been very limited previous survey undertaken.	Geophysical survey (see results at Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092]) has been scoped in line with the consultee response.
Historic Environment Officer, South Yorkshire Archaeology Team (13 March 2023)	Further background information requested to allow considered approval of geophysical survey scope.	Copy of heritage baseline assessment issued 13 March 2023 to provide additional background and support consideration of scope, and this is now incorporated into this ES.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Historic Environment Officer, North Lincolnshire Council (22 June 2023)	The Written Scheme of Investigation (WSI) for geophysical survey was submitted to the consultee for approval. The methodology was approved on 30 June 2023.	Survey works have been completed in line with the approved WSI. Results are available at Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092])
Historic Environment Officer, South Yorkshire Archaeology Team (22 June 2023)	The WSI for geophysical survey was submitted to the consultee for approval. The methodology was approved on 30 June 2023.	Survey works have been completed in line with the approved WSI. Results are available at Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092])
Historic Environment Officer, North	No response received to correspondence issued by project team via email.	A geophysical survey summary was issued to the LPA Officer. Input on a trenching strategy was also requested.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Lincolnshire Council (15 November 2023)		
Historic Environment Officer, South Yorkshire Archaeology Team (15 November 2023)	No response received to correspondence issued by project team via email.	A geophysical survey summary was issued to the LPA Officer. Input on a trenching strategy was also requested.
Setting Assessment Methodology		
Historic Environment Officer, North	Following the scoping opinion, a clarified scope and methodology for the setting assessment was submitted for approval. The	Revisions to the baseline assessment were undertaken to align with the revised scope and methodology.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Lincolnshire Council (22 March 2023)	proposed scope and methodology were approved on 24 March 2023.	
Design and Conservation Officer, Doncaster Council (22 March 2023)	Following the scoping opinion, a clarified scope and methodology for the setting assessment was submitted for approval. The proposed scope and methodology were approved on 24 March 2023.	Revisions to the baseline assessment were undertaken to align with the revised scope and methodology.
Historic England Yorkshire Regional team (22 March 2023)	Following the scoping opinion, clarification was sought regarding the setting assessment methodology by Historic England (HE). Further clarification was sought following the email of 6 April 2023.	Clarification was sent to HE on 6 April 2023 via email. Additional clarification was sent to HE 17 April 2023. No response received from HE following the 17 April 2023 email. However, the HE response to the statutory consultation has confirmed that they are content for

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		the Local Authority Officers to lead on the response to this application.
Geoarchaeological Assessment		
Historic Environment Officer, North Lincolnshire Council (22 June 2023)	The Officer queried the progress on commissioning and completing a geoarchaeological assessment.	The project team initially noted that the procurement process was ongoing. Work has subsequently been commissioned and completed. The results of this assessment (based on an earlier version of the Draft Order Limits can be found at Appendix 8.3 Geoarchaeological Assessment [REP2-043 Document Reference 6.3.8.3 Revision 2] A revision of the assessment is currently in preparation.
Historic England Science Advisor (12 March 2024)	The approach to further geoarchaeology was discussed	The team has requested specialist input on the geoarchaeological assessment and input on developing a proportionate programme of further geoarchaeological works.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		The Outcome of discussions has been incorporated into Appendix 8.3 Geoarchaeological Assessment [REP2-O43Document Reference 6.3.8.3 Revision 2]. A revision of the assessment is currently in preparation. The approach to further geoarchaeological assessment to be adopted moving forwards has been incorporated into Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32].
Historic England Science Advisor (12 July 2024)	The approach to, and need for, further geoarchaeological research was discussed	The draft geoarchaeological assessment was amended to consider warping as requested at a meeting with Archaeology Officers from North Lincolnshire and South Yorkshire Archaeology Service on 30 April 2024 A revised geoarchaeological assessment was circulated. This was followed up with further discussions via email on 15 July 2024

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		The Outcome of discussions has been incorporated into Appendix 8.3 Geoarchaeological Assessment [REP2-O43Document Reference 6.3.8.3 Revision 2]. A revision of the assessment is currently in preparation. This will include the full extent of the Order Limits. The approach to further geoarchaeological assessment to be adopted moving forwards has been incorporated into Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32].
Historic Environment Officer, North Lincolnshire Council (12 July 2024)	No comments received	Revised geoarchaeological assessment circulated

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Historic Environment Officer, South Yorkshire Archaeology Team (12 July 2024)	No comments received	Revised geoarchaeological assessment circulated
Trial Trenching & Fieldwalking		
Historic Environment Officer, North Lincolnshire Council (25 October 2023)	Officer declined to discuss trial trenching and stated that geophysical survey and geoarchaeological reports were required.	The project team requested LPA Officer input to help develop a proposed trial trenching strategy The project team provided the interim geophysical survey results and draft baseline assessment on 15 November 2023.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Historic Environment Officer, South Yorkshire Archaeology Team (25 October 2023)	No response received to correspondence issued by project team via email.	The project team requested input on the proposed trial trenching strategy.
Historic Environment Officer, North Lincolnshire Council (15 November 2023)	No response received to correspondence issued by project team via email.	The project team requested input on the proposed trial trenching strategy.
Historic Environment Officer, South	No response received to correspondence issued by project team via email.	The project team requested input on the proposed trial trenching strategy.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Yorkshire Archaeology Team (15 November 2023)		
Historic Environment Officer, North Lincolnshire Council (08 February 2024)	No response received to correspondence issued by project team via email.	The project team issued a consultation document outlining a proposed initial phase of targeted archaeological trial trenching with a request for Officer input.
Historic Environment Officer, North Lincolnshire Council	Officer agreed to meeting	The project team provided provisional geophysical survey results and the initial geoarchaeological assessment.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
(12 March 2024)		The team requested a meeting to discuss fieldwalking, test-pitting, next steps for geoarchaeology and trial trenching. The meeting was arranged for 30 April 2024 and is discussed as a separate table entry, below.
Historic Environment Officer, South Yorkshire Archaeology Team (12 March 2024)	Officer agreed to meeting	The project team provided provisional geophysical survey results and the initial geoarchaeological assessment. The team requested a meeting to discuss fieldwalking, test-pitting, next steps for geoarchaeology and trial trenching. The meeting was arranged for 30 April 2024 and is discussed as a separate table entry, below.
Teams meeting with Historic Environment Officer, North Lincolnshire	The meeting discussed archaeological progress to date and strategy for next steps.	Concerns over understanding of warping were raised by Officers – these have been addressed in a revision of the geoarchaeological assessment. Appendix 8.3 [REP2-043 Document Reference 6.3.8.3 Revision 2]

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Council and Historic Environment Officer, South Yorkshire Archaeology Team (30 April 2024)	The officers again declined to discuss trial trenching. N. Lincs Officer insisted all of the Order Limits must be fieldwalked prior to trial trenching being discussed.	The project team's stance regarding fieldwalking the whole order limits was disproportionate to advise appropriately on archaeological conditions. The project team agreed to consider the feasibility of targeted fieldwalking on the basis of areas of potential identified from the baseline and geoarchaeological assessments, which is being undertaken across the Order Limits. Fieldwalking was not presently possible given ground conditions and the very limited extent of ploughing, which was exclusively in areas of limited archaeological potential. This was communicated to the Officers on 12 July 2024.
Historic Environment Officer, North Lincolnshire Council (9 August 2024)	Follow-up emails received asking for clarification received 12/08/24 and 14/08/24	Notification of commencement of targeted trial trenching and issue of WSI was sent to North Lincs Officer. Clarification provided via email

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Historic Environment Officer, North Lincolnshire Council (2 September 2024)	Invite accepted. Officer requested invitation extended to HE Science Advisor	Project team sent the Officer an invitation to attend a site monitoring meeting. The invitation was extended to the Science Advisor
Historic Environment Officer, North Lincolnshire Council (3 September 2024)	The Officer raised concerns over the trenching being undertaken without their input or prior approval and without the fieldwalking having been undertaken. During the site meeting on 11 September 2024 the Officer acknowledged the trenching was being undertaken correctly. The Officer noted that they had provided comments on the draft WSI.	A formal response was issued to the Officer by the project team. This response rebutted the inference that the project team had breached professional standards, guidance or ethics. It also noted that despite the absence of agreement the project team had been seeking engagement and agreement on the scope of trenching since October 2023. Further whilst on site the Officer acknowledged that the works were being undertaken to required standards and that the WSI was subsequently agreed.

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		The response highlighted that the targeted trenching undertaken in 2024 was a preliminary phase of intrusive works not the sum total. The response concluded that the project team wished to take the opportunity to re-set our relationship with the Officer and work collaboratively to agree the way forward. Discussions during the site meeting on 11 September 2024 addressed reasoning behind proceeding with trenching at this stage (namely crop cycle and project programme to ensure the results were available to inform the Scheme design). The Officer’s comments were addressed and the revised WSI was approved by the LPA A position paper regarding the proposed way forward for archaeology was issued to the Officer on 26 February 2025. The position paper issued in February 2025 has been superseded by the Outline Archaeological Mitigation

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		Strategy – Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32] A meeting to discuss the mitigation strategy and next steps is to be arranged with the Officer. An invite was sent on 26 February 2025.
Teams meeting with Historic Environment Officer, South Yorkshire Archaeology Team (30 April 2024)	The Officer accepted the meeting invite	A meeting invite was sent to the Officer on 26 February 2025. The meeting was held on 17 April 2025 as part of the Statutory Consultation and is discussed in Table 8-3, below.

- 11.1.1. The comments raised within **ES Appendix 1.1 Planning Inspectorate EIA Scoping Opinion [APP-057]** dated 13 March 2023 relating to cultural heritage and archaeology are presented in **Table 8-2**.

Table 8-2: Summary of Consultation – Scoping Opinion for Tween Bridge Solar Farm

Id	Ref	Matter	PINS Comments	Applicant Response
3.7.1	n/a	n/a	No matters have been proposed to be scoped out of the assessment.	Noted.
3.7.2	Para 6.9	Impacts to archaeology and mitigation	The Inspectorate notes the potential for the Scheme to disturb or remove buried archaeological remains within the site. The ES should identify which works associated with the Scheme would result in direct impacts on archaeological resource (for example, those requiring piling), as well as indirect impacts (for example, changes to drainage patterns). Any impacts on archaeology which may result in a likely	Noted. The Applicant has discussed the need for and scope of any archaeological recording with relevant consultation bodies. The Applicant has agreed the approach for further archaeological recording with relevant consultation bodies. The agreed approach is set out in the methodology section of Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32].

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			significant effect during construction and/ or decommissioning should be assessed. The ES should set out the proposals for the recording of any archaeological resource which would be permanently lost as a result of the Scheme. Effort should be made to agree the approach with relevant consultation bodies.	
3.7.3	Paras 6.10 and 6.17 to 6.20	Impacts to setting	The Scoping Report acknowledges the potential for significant effects on the setting of heritage assets during operation of the Scheme. The ES should also identify potential impacts to the setting of heritage assets during construction and decommissioning and	The Applicant has ensured that landscape and heritage deliver a joined-up approach to the EIA assessment to ensure they deliver a co-ordinated response for visualisations. The Applicant is seeking to agree visualisations and photomontage locations with Historic England and other consultation bodies for inclusion with this ES Chapter.

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			assess any impacts that are likely to result in significant effects. The assessment of impacts to setting should be supported by baseline data which is sufficient to identify all designated and non-designated built heritage assets which could be impacted by the Scheme. The SZTV developed for the Landscape and Visual assessment should be used to confirm which heritage assets may experience visual impacts from the Scheme. Paragraph 6.20 of the Scoping Report states that there is no intervisibility between the Scheme and the Peel Hill motte and bailey castle scheduled monument and Thorne Conservation Area,	Stakeholders have been approached for approval of proposed viewpoints (23 May 2025) – no response has yet been received. The Applicant has provided clarification on the proposed methodology and scope of works in relation to the setting of historic buildings to Historic England and other consultation bodies. The approach has been agreed by Historic England and other consultation bodies including North Lincolnshire and Doncaster Borough.
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			although these lie partly within the SZTV shown on Appendix 4.1 of the Scoping Report. The ES should fully justify the choice of heritage assets included in the setting assessment and their locations should be depicted on a supporting plan. The assessment should be supported by appropriate visualisations such as photomontages to help illustrate the likely impacts of the Scheme. Effort should be made to agree appropriate viewpoint locations for such visualisations with relevant consultation bodies including local authorities and Historic England. Cross-reference can be made to the Landscape and	
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			Visual ES assessment to avoid duplication.	
3.7.4	Para 6.15	Baseline	The Scoping Report states that following completion of the desk-based assessment, the need for any further investigative works would be considered. 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.	Noted. The Applicant has liaised with the relevant consultation bodies regarding further investigative work to seek agreement of the scope and methodology. Approval for the initial targeted trial trenching was given retrospectively by North Lincolnshire. A position paper detailing the proposed approach to further intrusive archaeological investigations has been prepared and issued to relevant consultees. An archaeological mitigation strategy accompanies this assessment setting out the proposed approach. Additional meetings with relevant consultation bodies will be held to discuss the proposed approach and agree the scope and phasing of any additional works. Archaeological Strategy Appendix 8.6 [Document Reference 6.3.8.6 Revision 32]

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3.7.5	Para 6.22	Significance of effects	PINS noted that Historic England has raised concern (Appendix 2 of this Opinion) with the proposed approach to recording significance of heritage assets (both designated and non-designated). The Applicant should make effort to agree the approach with Historic England and other relevant consultation bodies. In the event that 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.	Noted. The Applicant has provided clarification on the methodology and scope of works to Historic England and other consultation bodies. The approach has been agreed by Historic England and other consultation bodies including North Lincolnshire and City of Doncaster Council.
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Table 8-3: Summary of Consultation – Statutory Consultation for Tween Bridge Solar Farm

Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
Historic England	We recommend that the applicant involve the Conservation Officers of the named local authorities and the archaeological staff of the relevant HERs in the development of this assessment. They are best placed to advise on: local historic environment issues and priorities; how the proposal can be tailored to avoid and minimise potential adverse impacts on the historic environment; the nature and design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of heritage assets. The assessment should also take account of the potential impact which associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions,	The relevant LPA Officers are being engaged with, regarding the next steps regarding archaeological works. The assessment takes account of the potential impact which associated activities might have. Hydrology data has been reviewed for the dewatering risk flagged has been addressed in baseline assessment Flood Risk Assessment Appendix 10.1 [Document Reference 6.3.10.1] and at paragraphs 5.40 and 5.41 in Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 2] The targeted trial trenching assessment report now included in assessment documents

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	understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to <i>in situ</i> decomposition or destruction of below ground archaeological remains and deposits and can also lead to subsidence of buildings and monuments. In general terms Historic England is broadly comfortable with the information submitted in the PEIR. We make the following points for your consideration in progressing these proposals: · The data relating to the trial trenching still need to be written up and included in the relevant submission documents. · Data from previous archaeological and geoarchaeological investigations for the Old River Don Wind Farm (PEIR Technical Appendix 9.3) should be	Appendix 8.4 Trial Trenching Report [APP-094] A revised geoarchaeological assessment is in preparation. The sondage data from the trial trenching and the Old River Don reports are discussed in the revised baseline assessment. At paragraphs 5.15–5.33 in Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 2] Magnetometry was not intended for consideration of deep deposits – the approach was discussed and agreed with LPAs prior to commencement and was purely to identify cut-feature archaeology. The survey results are available in Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092]

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	utilised in developing a more appropriate geophysical survey strategy. · The historical ground conditions of the proposed development area (marshy/wetland until the 17th century) have not been taken into account in the proposed archaeological evaluation methodology. A generic approach of magnetometry, long linear trial trenches etc. has been proposed without consideration of whether this would be appropriate across the proposal site. · Sondages created during trial trenching (September 2024; PEIR Chapter 8, Table 8.1, Consultation Summary) produced data regarding sub-surface topography, which has not been included in the submission documents. The data obtained from this work should inform an updated geoarchaeological and palaeoenvironmental Desk-Based Assessment (DBA; Technical Appendix 8.4).	Trial trenching undertaken to date has been targeted on specific areas of archaeological potential. Results in Appendix 8.4 Trial Trenching Report [APP-094] Due to the discrepancy in HER data and differing archaeological potential within parts of the Order Limits shovel test-pitting has been undertaken within the City of Doncaster Council section of the Order Limits to better define the potential for prehistoric material. The results of this evaluation are in Appendix 8.5 Test Pitting Report [APP-095] Alternative approaches are proposed for a subsequent phase of archaeological investigation (set out in Appendix 8.6 Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32])

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	· Magnetometry is more suited to near surface archaeology rather than deep alluvium. This does not appear to be taken into account in developing the archaeological evaluation methodology. · In certain areas deep stepped trenches may be a more appropriate methodological approach to assess the significance of features. · There appears to be a discrepancy between South Yorkshire and North Lincolnshire HERs in terms of asset distribution, with almost all non-designated heritage assets located in North Lincolnshire. Care should be taken not to rely on any recording bias in these data. Assumptions based on these data in planning archaeological investigations should be avoided. · Once the detailed design is available, areas involving deeper excavation (for cables, battery storage etc.) may require more detailed geoarchaeological and palaeoenvironmental investigation. Given the	

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	potential for prehistoric material sealed within alluvium and peat (such as the Neolithic land surface) this is likely to be in the form of borehole survey. · Any of the palaeochannels of the old River Don should also be subject to similar investigation if impacted by the scheme. · Water Environment Assessments may be required where hydrological and geochemical changes to the burial environment are likely. In regard to specific comments on <i>Chapter 8 – Cultural Heritage and Archaeology</i> of the PEIR document (March 2025): · [PEIR] Paragraph 8.6.17 notes the potential for earlier prehistoric activity, which it describes as “low”. The explanation offered states: “.... the likely levels of disturbance to such remains through industrial peat extraction in the 20th century diminish the chances of their having survived”. This assertion is not supported	

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	by current evidence. No field investigations have been undertaken to test this hypothesis. Appropriate geoarchaeological field investigations (expanding on the existing geoarchaeological DBA) could yield valuable data and provide a more accurate assessment of the potential. · [PEIR] Paragraph 8.6.17 also notes that there is “moderate” potential for “surface finds dating to the Mesolithic, Neolithic and Bronze Age to be found within the Site”. Several Mesolithic and Neolithic findspots of this nature are documented in the Heritage Technical Baseline (Technical Appendix 8.1, paragraphs 5.17–5.30). We are encouraged that the valuable potential of lithic scatters has been recognised in the submission documents. However, the forms of archaeological evaluation then proposed (geophysical survey and trial trenching) are not well suited to prospecting for and identifying such remains. To ensure that important evidence is not lost through the removal of the deposits containing the lithic resource, more targeted methods are required.	

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	As per Historic England's guidance on working with lithic material – and following on from recommendations made by the LPA's Historic Environment Officer (September 2024) – a staged and targeted methodology is required. This should include field-based geoarchaeological investigations and systematic fieldwalking. · [PEIR] Paragraph 8.6.17 also notes that <i>"it is likely that such remains lie at a greater depth than the works required to construct the solar farm..."</i>. There is the potential for the proposed development to impact such remains through changes to the hydrology and geochemistry of the burial environment. This needs to be fully considered.	
Lincolnshire County Council	<u>Study Area</u> It is noted in 8.3.3 of [PEIR] Chapter 8: Cultural Heritage and Archaeology, 'for built heritage assets a 1km buffer around the order limits and the Zone of Theoretical Visibility (ZTV) produced by the	Noted

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	Landscape team was used as the study area'. It is welcomed however that assets which lie outside the ZTV were also assessed to ensure they did not have an historic or functional association with the Scheme.	
Lincolnshire County Council	<u>Historic Landscape and Heritage Considerations in Local Policy</u> It is noted that the South Yorkshire HER, North Lincolnshire HER, National Heritage List for England, historic maps, various historical aerial photo archives, Historic England's Aerial Archaeology Mapping Explorer, Lincolnshire Archives and other online resources have been consulted. It is suggested that 'The Historic Character of the County of Lincolnshire (2022)' (HCC) report would also help to inform the characterisation of rural areas, where historic features overlap with landscape sensitivity. While not a policy document, its findings may support identification of sensitive receptors or valued landscapes. It is also recommended that	The HCC report has been consulted and the results incorporated into the baseline assessment (Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]) and this chapter. No neighbourhood plans pertinent to the Scheme were identified.

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	relevant Local and Neighbourhood Plans should also be consulted to inform the assessment of local heritage sensitivities.	
North Lincolnshire Council – Archaeology	The HER has advised that the potential effects to archaeology and the built heritage, impacts on the historic landscape character of the Isle of Axholme should be assessed and that the assessment should include fieldwork comprising a staged and iterative programme of fieldwalking, geophysical survey, geoarchaeological assessment and trial trenching. The HER has requested fieldwalking to be undertaken from initial consultation in 2023 onwards however this has not been undertaken citing that the land constituting the Draft Order Limit has not been subject to ploughing throughout this time. The HER would restate the importance of this iterative step of archaeological investigation to be completed.	LC14 – Isle of Axholme considered in revised assessment at paragraphs 5.42–5.57 in Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] The reasoning behind the lack of fieldwalking (very limited ploughing within the Order Limits) has been explained several times to the officer – fieldwalking is proposed pre-commencement as detailed in Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
	The methodologies employed during geophysical survey and geoarchaeological fieldwork are considered to be satisfactory however both techniques were employed prior to expansions in the Development Consent Order area – with increases of approximately 100ha in Area C, 200ha in Area E and Area F comprising approximately 664ha. These additional areas have not yet been subject to sufficient investigation to determine their archaeological potential.	The geophysical survey report is now completed and accompanies this chapter as Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092] The assessment at Appendix 8.3 Geoarchaeological Assessment [REP2-043Document Reference 6.3.8.3 Revision 2] is based on an earlier iteration of the draft order limits. Since this consultation was issued the Order Limits have been further revised and Area F is no longer part of the Order Limits. The geoarchaeological assessment is in the process of being revised to include other additional land within the Order Limits. Further geoarchaeological works will be discussed with the Officer moving forwards and will be considered in line with Appendix

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Consultee	Summary Of Consultee Response	How Response Has Been Addressed By Applicant
		8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]
	A very limited scheme of archaeological trial trenching was undertaken in August 2024. These works which targeted three discrete areas, one of which is now outside of the draft order limits, are considered to be inadequate to determine the archaeological potential of the draft order limit area. Further, the scope of the completed trenching was not agreed prior to the commencement of works per the HER's previous consultation responses. Whilst the quality of the fieldwork element of trenching was considered satisfactory during a site visit, the HER is yet to receive any post-excavation report to review.	None of the targeted trial trenching lies in areas that have been removed from the final Order Limits. The targeted trenching was deliberately limited in scope to focus on three areas of high potential to ensure these could be considered appropriately during the Scheme design. The targeted trial trenching report is now completed and accompanies this chapter as Appendix 8.4 Trial Trenching Report [APP-094]
North Lincolnshire	It has ... been noted that the documentation within the heritage baseline appears to exclude the easternmost	Since this consultation was received, the Order Limits have been revised and Area F is no

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Council – Archaeology	area (Area F) from consideration – identified as ‘National Grid Substation Assessment Area’ within the latest site layout plan, this area is presumed to allow flexibility for a forthcoming separate application for a substation however could be used to site additional panels as the application evolves or has been consented. Regardless of this potential development, all areas of the draft order limits could be subject to groundworks – through cable routes, haul roads etc as part of this scheme’s current draft layout. Therefore, all areas of the draft order limit should be subject to consideration within the technical baseline and ES chapter.	longer part of the Order Limits of this submission.
North Lincolnshire Council – Archaeology	The technical appendices and ES chapter available are based upon incomplete datasets for the latest draft order limits and do not contain appropriate assessment for a number of designated assets, archaeological features or the Isle of Axholme Area of Special Historic Landscape Interest. This appears to be on the basis of the heritage technical baseline	LC14 – Isle of Axholme considered in revised assessment at paragraphs 5.42–5.57 in Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] Since this consultation was received, the Order Limits have been revised and Area F is no

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	having been completed to previous draft order limits rather than the current draft order limit. The latest data refresh for HER data was undertaken for this ES chapter on 20 November 2024 which excluded the wider Area F in which a number of features are identified within the HER's dataset but not appropriately considered for assessment in light of the above. The expansion of potential development areas within Area F should also be reflected in an expansion of assessment of historic landscape – which is now greatly expanded into the LC14 policy area, as well as the setting of designated heritage assets in consultation with the Conservation Officer.	longer part of the Order Limits of this submission.
North Lincolnshire Council – Conservation	The expanded order limit area stands out to me in two locations particularly – that it now seems to include a significant part of the designed landscape to Hirst Priory, a grade II listed building and also now encircles Mosswood Manor which includes a grade II listed farmhouse, the two buildings are linked (as I understand) by historic ownership under the Stovin	Hirst Priory is no longer within the Order Limits Since this consultation was received, the Order Limits have been revised and Area F is no longer part of the Order Limits of this submission.

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	family. It may be that the fields around the farmhouse were all under similar ownership therefore the extended field system around here is a direct part of the setting of the farmhouse. Further investigation of this area would enable informed decisions about the use of the land in this area within the process, I note this isn't included in the heritage statements here and it seems as if this would be done by the National Grid whenever they apply for the Substation. This could change as the application develops so an assessment to understand the significance of these assets and their significance should be required now. There are other listed structures forming a part of the expanded area, mostly the listed bridges and syphons which are more diminutive to the houses etc but are still an important part of the development of the landscape here and should also be considered during assessment. The other notable change is the addition of the parcel of land immediately south of Dirtness Pumping	Comments regarding the Pumping Station have been considered and addressed in this Chapter and in Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] The various bridges and syphons within the study area have been considered during the preparation of the setting assessment within Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]. None of these assets have been identified as being adversely affected by the Scheme.

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	Station and the listed cottage. These have been assessed within the Heritage Statement. My understanding is the purpose of the pumping stations was to help control the drainage and water level of the surrounding agricultural landscape here therefore the pumping station is a part of that landscape the same as farmhouses, agricultural buildings etc. If this is the case then we ought to disagree with Pegasus' assessment the setting of the building is limited only to the waterway and therefore the addition of solar panels in that location would have no impact on the setting or views of the pumping station.	
City of Doncaster Council	<u>Built Heritage</u> In terms of built heritage, CDC notes that there are no designated heritage assets located within the Site Boundary. Notwithstanding this, CDC would have expected to have been involved in some engagement prior to the statutory consultation commencing. This lack of	Further consideration of Thorne Conservation Area has been provided in the baseline assessment Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] The CDC conservation officer has been engaged with regarding the scope and methodology for built heritage surveys during

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	engagement is evidenced by Table 8.1 of [PEIR] Chapter 8. For example, whilst CDC acknowledges that the Order Limits would be separated from Thorne Conservation Area to the west, there is no explanation provided as to why the Applicant considers the setting of the Conservation Area would be suitably preserved. CDC would have expected an acknowledgement of this within the assessment at least.	the ES scoping phase and also with regard to proposed heritage specific viewpoints.
City of Doncaster Council	<u>Archaeology Baseline and ES</u> Cultural heritage and archaeology is considered in Chapter 8 of the Preliminary Environmental Information Report (PEIR) and is supported by technical appendices... [N]o intrusive investigations have yet taken place within the South Yorkshire part of the scheme. The Heritage Technical Baseline report is essentially an archaeological desk-based assessment which aims to	The HER imbalance between SYAS and North Lincolnshire is discussed in the revised baseline assessment Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] Areas of peat/moor landscape provided with identification numbers to allow for assessment following discussion with SYAS

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	review the known heritage resource, identify extant heritage assets and assess the potential for buried archaeological remains within the scheme. As such, it contains a gazetteer of archaeological monuments and events recorded on each authorities Historic Environment Record. The gazetteer contains approximately 58 pages of entries for North Lincolnshire and 3.5 pages for South Yorkshire despite the area being roughly equal and the similarity of the landscapes. A discussion of this imbalance in the evidence base (arising from modern political boundaries rather than being a reflection of past activity) needs to be included within the baseline to prevent a false impression of the archaeological potential being created. Factors noted contributing to this scarcity were the nature of the former wetland environment, before widespread drainage in the 17th century, being unsuitable for settlement and agriculture and the local geology masking deeper or more ephemeral	The impacts and factors identified have been considered in the preparation of this Chapter and the baseline assessment Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]

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	archaeological features. A third factor is the character of many of the known archaeological sites recorded in the Heritage Technical Baseline report i.e. flint scatters, not being amenable to recording by geophysical survey. Some of the additional sources that SYAS previously advised should be consulted have been included. The Heritage Technical Baseline report concludes that the “adverse effect of construction upon the archaeological resource is likely to require a programme of mitigation” Regarding the assessment methodology outlined in [PEIR] Chapter 8, I am unclear on some aspects. Some of the levels of effect described in Table 8.3 seem similar and it is not clear which effect would applied in any given circumstance. Likewise, the description of ‘Moderate Harm’ where “a notable level of harm to the significance of a non-designated heritage asset” is	

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	"Not deemed to be significant effects in EIA terms" is worrying and requires clarification. As we are still at a relatively early stage in understanding the archaeological resource and the implications of the proposals upon it, the significance of any archaeological remains has yet to be determined and no mitigation proposals have been agreed. Given this, it is not possible to say that there will be no direct effects from the operational or decommissioning phases of the project and these should not be scoped out of discussion. For example, during the operational phase ground disturbance could occur through panel or cable replacement and vehicle rutting. The removal of piles, cables and other infrastructure during decommissioning would also cause ground disturbance. It is understood that the full results of desk-based assessment, geophysical survey and any further	

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	evaluation surveys were not available at time of writing the PEIR but will accompany the DCO Application by being presented in the ES. CDC therefore reserves its position in respect of these matters in the event that further results are forthcoming but in the meantime welcomes the fact that SYAS continue to be engaged in an ongoing workstream in respect of trial trenching and notwithstanding the geophysical survey results, as it is necessary for the applicant to provide sufficient trial trenching coverage to ensure that impacts on below-ground heritage assets can be mitigated by detailed design.	
City of Doncaster Council	<u>Geophysical Survey</u> A geophysical survey has been completed across much of the area. This is being updated to reflect changes to the draft order limits and will need reviewing once completed. Anomalies of probable or possible archaeological origin, although limited in	The geophysical survey has been completed. The report detailing the results is available at Appendix 8.3 Geophysical Survey Report [REP2-043 Document Reference 6.3.8.3 Revision-2] Anomalies identified by the survey have been provided with unique identification numbers and are considered within the baseline

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	number, were identified and will require further evaluation to establish their significance.	assessment Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32] and this Chapter. Further evaluation will be discussed with CDC moving forwards and will be considered in line with Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]
City of Doncaster Council	<u>Geoarchaeology</u> The Geoarchaeological and Palaeoenvironmental Desk-based Assessment examines the sub-surface stratigraphy to build a more detailed understanding of the former landscapes and environmental changes over time. It notes that there is a considerable literature on the geomorphological and palaeoenvironmental history and archaeology of the Humber Wetlands although the valley of the old River Don in particular has not been the focus of much research. The report identified four main character	The assessment at Appendix 8.3 Geoarchaeological Assessment [REP2-043 Document Reference 6.3.8.3 Revision 2] is based on an earlier iteration of the draft order limits. The geoarchaeological assessment is in the process of being revised to include additional land within the Order Limits. Further geoarchaeological works will be discussed with CDC moving forwards and will

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	areas, the lake floor, former river channels, low-lying floodplain and the wetland/ dryland boundary zone illustrating the development of the landscape since the end of 18 the last ice age. Rising sea levels led to deposit accumulation across the area and the formation of the wetland landscape discouraging widespread settlement from the later prehistoric period through to the extensive drainage works of the 17th century. The character of the archaeological resource within the site is therefore likely to be represented by flint scatters of Mesolithic, Neolithic & Bronze Age date (c.10,000–1,000 years ago), features dating to the 17th century or later and palaeoenvironmental evidence largely within former river channels or deposits of peat. Research in other areas of the Humber wetlands suggests that river channels were attractive locations for Mesolithic hunter-gatherers. Archaeological potential is characterised as low due to the deposits likely to contain archaeological evidence being deeply buried but impacts can't be ruled out on	be considered in line with Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]

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	the basis of current information. It is not known how deep the deposits are and there is little information on the depth of any piles required. In addition, the nature of the archaeological material makes it susceptible to even minor damage. Based on these reports, it is now possible to begin to recognise the archaeological resource within the order limits and discuss appropriate techniques to evaluate it. Flint scatters are representative of important prehistoric activity such as transitory occupation or hunting camps. Known sites, areas of raised sandy ridges and former river channels should be targeted by a programme of shovel testing. The latter targets should also be assessed for palaeoenvironmental potential.	
City of Doncaster Council	<u>Evaluation and Mitigation</u> Different evaluation techniques, such as fieldwalking and shovel testing, will be required to assess the extent of such archaeological interest.	Following discussions with SYAS regarding the lack of ploughed land meaning fieldwalking was not practicable at this time a focused programme of shovel test-pitting was agreed. The WSI was approved by SYAS on 3 June 2025. The report detailing the results of this

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	A programme of geophysical survey has been completed and consultation with South Yorkshire Archaeology Service (SYAS) is ongoing with regards to further stages of evaluation surveys.	evaluation forms Appendix 8.5 Test Pitting Report [APP-095] A preliminary version of the Archaeological Strategy for post-consent evaluation and mitigation accompanies this Chapter as Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32] it is proposed that this forms the basis of discussions with SYAS to agree a detailed scheme of further archaeological investigation.
Thorne & Hatfield Moors Conservation Forum	The site includes the infilled former channels of both the Idle and Don and mitigation should include detailed study of both and not just a token outline pollen diagram. The Sandtoft site (see Samuels & Buckland 1978) included not only evidence for the changing nature of alluviation in the Late Roman period (see Buckland & Sadler 1985) but also an excellent Late glacial sequence beneath blown sands. A preliminary examination of samples recovered during the	Revised geoarchaeological assessment is in preparation. Sondage data and wind farm geoarchaeological work discussed in revised baseline assessment. Alternative approaches are proposed for a subsequent phase of archaeological

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	archaeological mitigation work for the construction of the M180 indicated that peat deposits extended back to ca. 14500 bp to the warmer part of the Late glacial interstadial. Iron Age and Roman field systems and settlements are also evident on aerial photographs, including unpublished material in the former Doncaster Museum, and much must be hidden beneath post-medieval warping to the north of the M180 (see unpublic. reports for Tween Bridge wind farm (Rackham et al. 2013; Trimble & Peachey 2012).	investigation, set out in Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]

8.2.149. Areas of outstanding issues between the Applicant and the Local Authorities are identified with regard to the approach undertaken in relation to fieldwalking, archaeological evaluation and mitigation. These are focused in particular on the lack of fieldwalking to date and the iterative (stage-gated) approach advocated for by the Officer at North Lincolnshire Council.

8.2.150. The issues remain under discussion with the Local Authority Officers and it is envisaged that pre-examination consultation on the Outline Archaeological Mitigation Strategy **Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]** is likely to result in many of the outstanding concerns being allayed.

8.3. Assessment Approach

Methodology

Guidance Documents

8.3.1. This chapter; the **Heritage Baseline Assessment, Appendix 8.1 [Document Reference 6.3.8.1 Revision 32]** and the methodology for the assessment of development effects have been informed by the following documents:

- Overarching National Policy Statement for Energy (EN-1) (November 2023) **[Ref. 8-6];**
- National Policy Statement for Renewable Energy Infrastructure (EN-3) (November 2023) **[Ref. 8-7];**
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (November 2023) **[Ref. 8-8];**
- Historic England's Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment (published by English Heritage in 2008) **[Ref. 8-11];**
- Historic England's Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision Taking (2015) **[Ref. 8-13];**
- Historic England's Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2017) **[Ref. 8-15];**
- Historic England's Advice Note 15: Commercial Renewable Energy Development and the Historic Environment (2021) **[Ref. 8-50];**
- Historic England's Advice Note 12: Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019) **[Ref. 8-14].**

Sources of Information

8.3.2. In order to collect historic environment data for the purposes of this Chapter, a 1km Study Area around the Order Limits was adopted in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]** to consider non-designated archaeological assets. This area was considered, in line with professional judgment and Chartered

Institute for Archaeologists (ClfA) guidance, to provide sufficient contextual information about the Scheme and its surrounding landscape, from which to assess the archaeological potential within the Order Limits and potential impacts of the Scheme on the archaeological resource.

- 8.3.3. For designated assets and all built heritage assets a 1km buffer around the Order Limits and the Screened Zone of Theoretical Visibility (SZTV) produced by the Landscape team was used as the Study Area. It is noted that a SZTV is a tool of assessment. It is not considered wholly accurate and for heritage, it is understood that setting is not a purely visual concept. Therefore, assets which lay within 1km of the Order Limits but outside the SZTV were also assessed to ensure they did not have an historic or functional association with the Scheme. The SZTV used is screened, meaning substantial barriers to intervisibility, such as interceding buildings or blocks of woodland have been taken into account. This approach is deemed acceptable in this instance as those barriers to intervisibility that are most susceptible to change, such as woodland, are long standing features within the landscape and it is deemed most probable that they will be subject to retention and maintenance rather than removal going forwards. Areas of recent tree planting have also been noted within the Study Area though these are not included within the SZTV modelling.
- 8.3.4. The Scheme is located across the administrative border between Doncaster Borough and North Lincolnshire Councils. The study area is shown on Figure 1 of **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]** and also on **Figures 8.1–8.3** that accompany this Chapter **[Document References 6.4.8.1; 6.4.8.2 and 6.4.8.3]**.
- 8.3.5. For the purposes of this assessment the scope of the setting assessment includes all designated heritage assets that are located within the SZTV as well as non-designated historic buildings within the SZTV as well as assets which lay within 1km of the Order Limits but outside the SZTV.
- 8.3.6. The following sources of publicly available archaeological and historical information were consulted as part of the preparation of the **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**:

- The South Yorkshire Historic Environment Record (SYHER) for information on the recorded heritage resource within the vicinity of the western part of the Scheme;
- The North Lincolnshire Historic Environment Record (NLHER) for information on the recorded heritage resource within the vicinity of the eastern part of the Scheme;
- The National Heritage List for England (NHLE) for information on designated heritage assets;
- Historic maps available online;
- Aerial photographs available online via Historic England's Aerial Photo Explorer, Cambridge Air Photos and Britain from Above;
- Historic England's Aerial Archaeology Mapping Explorer;
- The Lincolnshire Archives;
- Other online resources, including Ordnance Survey Open Source data; geological data available from the British Geological Survey and Cranfield University's Soilscape Viewer; Google Earth satellite imagery; and LiDAR data from the Environment Agency.

Assessment of Significance

- 8.3.7. The significance of heritage assets has been assessed in accordance with NPS (EN-1) however, there is no definitive grading system for assessing or categorising significance outside of the categories of Designated Heritage Assets of the Highest Significance, Designated Heritage Assets of Less than the Highest Significance and Non-Designated Heritage Assets, specifically with regards to the relative significance of different parts of an asset and a degree of professional judgement is required. The categories of significance within NPS (EN-1) have been used within the context of this assessment and are set out in **Table 8-4** below.
- 8.3.8. Heritage assets are defined by the NPS (EN-1) as *"a building, monument site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest. Heritage assets include designated heritage assets, and assets identified by the local planning authority (including local listing)"*.

- 8.3.9. Heritage significance is defined as the value of a heritage asset to this and future generations because of their heritage interest. That interest may be archaeological, architectural, artistic or historic in nature. The assessment of significance will be guided primarily by the key industry-standard policies and guidance contained in '*Analysing Heritage Significance*',¹ where it is described with reference to the following key forms of value:
- Archaeological interest: There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.
 - Architectural and artistic interest: These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skills, like sculpture.
 - Historic Interest: An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.
- 8.3.10. Significance derives not only from a heritage asset's physical fabric, but also from its setting. The setting of a heritage asset is defined as the surroundings within which it is experienced; its extent is not fixed and may change as the asset and its surroundings evolve. However, setting is not a heritage asset in its own right, nor is it a heritage designation in its own right. Its importance lies in what it contributes to the significance of the heritage asset. This contribution may be positive, negative or neutral.
- 8.3.11. Paragraphs 5.9.9–5.9.15 of the NPS (EN-1) is clear in its recognition of the need for an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. It further states

¹ Historic England, *Statements of Heritage Significance: Analysing Significance in Heritage Assets*, Historic England Advice Note 12 (Swindon, October 2019).

that local planning authorities should require a field evaluation in addition to an appropriate desk-based assessment, where proposals include or have the potential to include heritage assets of archaeological interest. It is also unequivocal on the matter of scope, as it mentions that the level of detail should be proportionate to the importance of the asset, and no more than sufficient to understand the potential impact of a development on that significance.

- 8.3.12. The way in which heritage significance is expressed within the ES has been specifically developed, based on good practice, to ensure that it is fully aligned with the requirements of NPS (EN-1) and NPS (EN-3) and the Planning (Listed Buildings and Conservation Area) Act 1990, the NPPF and the recommendations set out in Historic England's Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment.
- 8.3.13. The statements of significance for each of the assets reflects the language of the Planning Act 1990, utilising terms such as character and appearance (of Conservation Areas), and architectural and historic interest (of Listed Buildings).
- 8.3.14. The statements of significance describe 'what matters and why', i.e., which aspects of an asset and its setting contribute to the heritage significance of the asset and how. Although the statements rightly acknowledge the fabric of heritage assets as representing the principal embodiment and physical manifestation of their heritage significance, the surroundings of the assets, and the ways in which they can be experienced, often contribute to their overall significance. This will be assessed in line with the settings assessment methodology that follows the three step GPA 3 process².
- 8.3.15. Although terms such as High, Medium or Low value, and National, Regional or Local importance are often adopted in EIA to express a summary description of the 'relative significance' heritage assets, they are not universally recognised or accepted terms within heritage sector guidance and amongst heritage professionals. This is because these concepts require complex definitions to properly allow for their application, and do

² Historic England, *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3* (2nd edition, Swindon, December 2017).

not directly relate to the language or key tests required in determining planning applications or heritage consents.

- 8.3.16. The criteria proposed for this assessment are laid out in Table 8-4, with terminology used derived directly from the NPS EN-1, and the Planning (Listed Building and Conservation Area) Act 1990, and provides the decision-maker with sufficient information to understand how change could bring benefit or harm to the heritage significance of an asset, thus enabling an informed judgement to be reached.

Table 8-4: Criteria for Assessing the Significance of Heritage Assets

Heritage Significance	Description Of Criteria
Designated heritage assets of the highest significance	Scheduled Monuments, Protected Wreck Sites, Registered Battlefields, Grade I and II* Listed Buildings, Grade I and II* Registered Parks and Gardens, and World Heritage Sites. Archaeological assets with a significance demonstrably equivalent to a Scheduled Monument
Designated heritage assets of less than the highest significance	Grade II Listed Buildings, Conservation Areas and Grade II Registered Parks and Gardens.
Non-designated heritage assets	Heritage assets, the significance of which has been ascertained through sufficient evaluation and assessment. Non-designated heritage assets are further sub-divided on the basis of their geographical importance into the following three categories:

	Regional – a non-designated asset of sufficient significance to address regional research framework objectives³ County – a non-designated asset of sufficient significance to partially address regional research framework objectives Local – a non-designated asset of insufficient significance to address research framework objectives
No significance	Remains that have been sufficiently demonstrated to have no heritage interests as defined in the NPPF Glossary.

Assessment of Development Effects

- 8.3.17. The assessment methodology directly reflects key concepts in planning policy and heritage guidance with regard to the assessment of development effects upon heritage assets. It therefore offers an appropriate way to define such effects. Clear statements of significance (the ‘what matters and why’ approach), and a sound understanding of the character of the Scheme, as presented in this assessment methodology, allow for a transparent articulation of the nature/degree of any identified effects.
- 8.3.18. The effects of the Scheme arise as a result of change to the heritage assets. The significance of a heritage asset can be harmed or lost through alteration, destruction or development within its setting. Similarly, the significance of a heritage asset can experience change that does not result in harm, or may even lead to benefits through alteration or development within its setting. In summary, a project could bring about change within the setting of a heritage asset, resulting in harm, no change, or benefits to its significance, or the way in which that significance is experienced.

³ Regional Research framework objectives refers to a series of agreed priorities that have been identified by key stakeholders and documented in published regional research frameworks to allow a shared framework for Local Authorities, Contractors, Academics and Volunteers.

- 8.3.19. The assessment of the effect of the development upon the cultural heritage resource takes into account numerous factors, including the scale of development, the type and extent of physical disturbance and the visual effects. The development effects may be:
- Direct or indirect. Direct effects arise from physical change to the resource, which affects its physical remains or fabric (i.e., excavations which may affect the archaeological remains or alterations to historic buildings). Indirect effects relate to changes within the setting of heritage assets;
 - Permanent or temporary. Due to their character, direct effects upon the physical remains of heritage assets are permanent, and not reversible. However, effects on the settings of heritage assets may be temporary, if the development has a limited lifespan. These temporary effects can be short, medium or long-term.
 - Beneficial, when the development leads to the enhancement of the heritage resource, or adverse, when it results in harm to, or loss of, the significance of a heritage asset. If the resource will not be affected by the Scheme, or the level of change is so slight that it does not affect the significance of the asset, there will be no harm.
- 8.3.20. To further assist in the decision-making process, the following approach to the assessment of effects upon heritage assets (**Table 8-5**) has been utilised. The language used here is entirely consistent with the NPS (EN-1), NPPF and the Planning Act (Listed Building and Conservation Area) 1990 and provides sufficient information to reach informed judgement.

Table 8-5: Magnitude of effect upon heritage assets

Level Of Effect	Description	Applicable Policies
Heritage Benefit	The proposals would enhance the heritage significance of a heritage asset.	Enhancing the significance of a heritage asset is a desirable development outcome in respect of heritage. It is consistent with key policy and guidance, including NPS (EN-1) paragraph 5.9.36.

Level Of Effect	Description	Applicable Policies
No harm (neutral effect)	The proposals would preserve the significance of a heritage asset.	Preserving a Listed Building and its setting is consistent with Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990. Preserving or enhancing the character or appearance of a Conservation Area is consistent with Section 72 of the Act. Sustaining the significance of a heritage asset is consistent with NPS (EN-1) paragraph 5.9.36.
Less than Substantial Harm	The proposals would result in a restricted level of harm to the significance of a heritage asset, such that the asset's contributing heritage values would be largely preserved (lower end). The proposals would lead to a notable level of harm to the significance of a heritage asset. A reduced, but appreciable, degree of its heritage significance would remain (upper end). Not usually deemed to be significant effects in EIA terms – however professional judgement will be applied to this consideration.	In accordance with NPS (EN-1) paragraph 5.9.32, in determining an application, this level of harm upon designated heritage assets (or assets of equivalent significance) should be weighed against the public benefits of the proposals. Proposals involving change to a Listed Building or its setting, or any features of special architectural or historic interest which it possesses, or change to the character or appearance of Conservation Areas, must also be considered within the context of the Planning Act (Listed Buildings and Conservation Areas) 1990.

Level Of Effect	Description	Applicable Policies
Substantial Harm	The proposals would very much reduce the heritage asset's significance or vitiate that significance altogether. Deemed to be significant effects in EIA terms.	Paragraph 5.9.31 of the NPS (EN-1) states that substantial harm or loss to designated heritage assets of the highest significance should be wholly exceptional (Scheduled Monuments, protected wreck sites, registered battlefields, grade I and II* Listed Buildings, grade I and II* Registered Parks and Gardens, and World Heritage Sites) and to assets of less than highest significance (grade II Listed Buildings, or grade II Registered Parks or Gardens) . Schemes leading to such harm to designated heritage assets should be refused unless it is demonstrated that this substantial harm is necessary to achieve substantial public benefits.
Minor Harm	The proposals would result in a restricted level of harm to the significance of a non-designated heritage asset, such that the asset's contributing heritage values would be largely preserved. Not deemed to be significant effects in EIA terms.	The effects of a scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPS (EN-1) paragraph 5.9.33).

Level Of Effect	Description	Applicable Policies
Moderate Harm	The proposals would lead to a notable level of harm to the significance of a non-designated heritage asset. A reduced, but appreciable, degree of its heritage significance would remain. Not deemed to be significant effects in EIA terms.	The effects of a scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPS (EN-1) paragraph 5.9.33).
Major Harm	The proposals would very much reduce a non-designated heritage asset's significance or vitiate that significance altogether. Deemed to be significant effects in EIA terms.	The effects of a scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPS (EN-1) paragraph 5.9.33).

Legislative and Policy Framework

- 8.3.21. Legislation relating to the built historic environment is primarily set out within the Planning (Listed Buildings and Conservation Areas) Act 1990, which provides statutory protection for Listed Buildings and their settings and Conservation Areas.
- 8.3.22. Scheduled Monuments are protected by the provisions of the Ancient Monuments and Archaeological Areas Act 1979 which relates to nationally important archaeological sites. Whilst works to Scheduled Monuments are subject to a high level of protection; it is important to note that there is no duty within the Ancient Monuments and Archaeological Areas Act 1979 to have regard to the desirability of preservation of the setting of a Scheduled Monument.

National Planning Policy

National planning policy that has been considered comprises the following National Policy Statements (NPS):

- Overarching NPS for Energy (EN-1) (November 2023) (NPS EN-1);
- NPS for Renewable Energy Infrastructure (EN-3) (November 2023) (NPS EN-3)
- NPS for Electricity Networks Infrastructure (EN-5) (November 2023) (NPS EN-5)

The relevant text from each NPS is presented below.

NPS (EN-1)

- 8.3.23. Heritage is discussed at section 5.9 of the NPS (EN-1). Paragraphs which are considered to be of particular relevance to heritage (though it is noted that the assessment which has been carried out to date demonstrates that there would be no substantial harm caused to the significance of any designated heritage asset arising from the Scheme) comprise:

“5.9.27 When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset’s conservation. The more important the asset, the greater the weight should be. This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance.

5.9.28 The Secretary of State should give considerable importance and weight to the desirability of preserving all heritage assets. Any harm or loss of significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification.

5.9.29 Substantial harm to or loss of significance of a grade II Listed Building or a grade II Registered Park or Garden should be exceptional.

5.9.30 Substantial harm to or loss of significance of assets of the highest significance, including Scheduled Monuments; Protected Wreck Sites; Registered Battlefields; grade I and II Listed Buildings; grade I and II* Registered Parks and Gardens; and World Heritage Sites, should be wholly exceptional.*

5.9.31 Where the proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm to, or loss of, significance is necessary to achieve substantial public benefits that outweigh that harm or loss, or all the following apply:

- the nature of the heritage asset prevents all reasonable uses of the site
- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation
- conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible
- the harm or loss is outweighed by the benefit of bringing the site back into use

5.9.32 Where the proposed development will lead to less than substantial harm to the significance of the designated heritage asset, this harm should be weighed against the public benefits of the proposal, including, where appropriate securing its optimum viable use.

5.9.33 In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

5.9.36 When considering applications for development affecting the setting of a designated heritage asset, the Secretary of State should give appropriate weight to the desirability of preserving the setting such assets and treat favourably applications that preserve those elements of the setting that make a positive contribution to, or better reveal the significance of, the asset. When considering applications that do not do this, the Secretary of State should give great weight to any negative effects, when weighing them against the wider benefits of the application. The greater the negative impact on the significance of the designated heritage asset, the greater the benefits that will be needed to justify approval."

- 8.3.24. An important addition to the NPS (EN-1) version of November 2023 was the Government commitment to fully decarbonizing the power system by 2035 to underpin net zero ambitions. As part of this and to help achieve these targets, the Government has concluded that there is a critical

national priority (CNP) for the provision of nationally significant low carbon infrastructure, as identified at paragraph 4.2.4 of NPS (EN-1). The implications of this CNP are set out in the paragraphs below:

“4.2.15 Where residual non-HRA or non-MCZ impacts remain after the mitigation hierarchy has been applied, these residual impacts are unlikely to outweigh the urgent need for this type of infrastructure. Therefore, in all but the most exceptional circumstances, it is unlikely that consent will be refused on the basis of these residual impacts. The exception to this presumption of consent are residual impacts onshore and offshore which present an unacceptable risk to, or unacceptable interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero. Further, the same exception applies to this presumption for residual impacts which present an unacceptable risk to, or unacceptable interference offshore to navigation, or onshore to flood and coastal erosion risk.

4.2.16 As a result, the Secretary of State will take as the starting point for decision-making that such infrastructure is to be treated as if it has met any tests which are set out within the NPSs, or any other planning policy, which requires a clear outweighing of harm, exceptionality or very special circumstances.

4.2.17 This means that the Secretary of State will take as a starting point that CNP Infrastructure will meet the following, non-exhaustive, list of tests:

- where development within a Green Belt requires very special circumstances to justify development;*
- where development within or outside a Site of Special Scientific Interest (SSSI) requires the benefits (including need) of the development in the location proposed to clearly outweigh both the likely impact on features of the site that make it a SSSI, and any broader impacts on the national network of SSSIs.*
- where development in nationally designated landscapes requires exceptional circumstances to be demonstrated; and*
- • where substantial harm to or loss of significance to heritage assets should be exceptional or wholly exceptional.”*

- 8.3.25. Therefore, when considering any residual harm (or adverse effects) identified within this ES chapter, because the Scheme is of CNP as low carbon infrastructure as per paragraphs 4.2.16 – 4.2.17 (set out above), the starting point for decision-making shall be that such infrastructure is to be treated as if it has met any tests which are set out within the NPSs, or any other planning policy, which requires a clear outweighing of harm, exceptionality or very special circumstances.

NPS (EN-3)

- 8.3.26. The NPS (EN-3) includes a provision for the consideration of solar schemes. Of relevance to the Scheme, and its temporary nature, the NPS EN-3 sets out a series of technical considerations for the Secretary of State to take into account in the decision-making process. Paragraphs 2.10.147 – 2.10.151 are of relevance:

"2.10.147 Where the consent for a solar farm is to be time-limited, the DCO should impose a requirement setting that time-limit from the date the solar farm starts to generate electricity.

...

2.10.149 An upper limit of 40 years is typical, although applicants may seek consent without a time period or for differing time-periods for operation.

2.10.150 The time limited nature of the solar farm, where a time limit is sought as a condition of consent, is likely to be an important consideration for the Secretary of State.

2.10.151 The Secretary of State should consider the period of time the applicant is seeking to operate the generating station, as well as the extent to which the site will return to its original state, when assessing impacts such as landscape and visual effects and potential effects on the settings of heritage assets and nationally designated landscapes.

...

2.10.160 Solar farms are generally consented on the basis that they will be time-limited in operation. The Secretary of State should therefore consider the length of time for which consent is sought when considering the impacts of any indirect effect on the historic environment, such as effects on the setting of designated heritage assets."

- 8.3.27. Specific considerations relating to heritage are set out at paragraphs 2.10.107 to 2.10.119 which state:

"2.10.107 The impacts of solar PV developments on the historic environment will require expert assessment in most cases and may have effect both above and below ground.

2.10.108 Above ground impacts may include the effects on the setting of Listed Buildings and other designated heritage assets as well as on Historic Landscape Character.

2.10.109 Below ground impacts, although generally limited, may include direct impacts on archaeological deposits through ground disturbance associated with trenching, cabling, foundations, fencing, temporary haul routes etc.

2.10.110 Equally, solar PV developments may have a positive effect, for example archaeological assets may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated.

2.10.111 Generic historic environment impacts are covered in Section 5.9 of (EN-1).

2.10.112 Applicant assessments should be informed by information from Historic Environment Records (HERs) or the local authority.

2.10.113 Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, the applicant should submit an appropriate desk-based assessment and, where necessary, a field evaluation. These should be carried out using expertise where necessary and in consultation with the local planning authority, and should identify archaeological study areas and propose appropriate schemes of investigation, and design measures, to ensure the protection of relevant heritage assets.

2.10.114 In some instances, field studies may include investigative work (and may include trial trenching beyond the boundary of the proposed site) to assess the impacts of any ground disturbance, such as proposed cabling, substation foundations or mounting supports for solar panels on archaeological assets.

2.10.115 The extent of investigative work should be proportionate to the sensitivity of, and extent of, proposed ground disturbance in the associated study area.

2.10.116 Applicants should take account of the results of historic environment assessments in their design proposal.

2.10.117 Applicants should consider what steps can be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting.

2.10.118 As the significance of a heritage asset derives not only from its physical presence but also from its setting, careful consideration should be given to the impact of large-scale solar farms which depending on their scale, design, and prominence, may cause substantial harm to the significance of the asset.

2.10.119 Applicants may need to include visualisations to demonstrate the effects of a proposed solar farm on the setting of heritage assets."

NPS (EN-5)

- 8.3.28. There is no specific discussion of heritage within the NPS (EN-5). There are references to heritage assets within the document in relation to the consideration of the siting of substations where the NPS (EN-5) identifies that they should:

"...seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections..."

- 8.3.29. Footnote 21 of NPS (EN-5) provides examples of heritage designations.

- 8.3.30. The final references to heritage within this document are found at paragraph 2.9.25 with relation to the consideration of consent for underground and subsea cable routes over a proposed overhead line. It states:

"...the Secretary of State should only grant development consent...if they are satisfied that the benefits accruing from the former proposal clearly outweigh any extra economic, social or environmental impacts that it presents...In this context it should consider:

the landscape and visual baseline characteristics of the setting of the proposed route, in particular, the impact on high sensitivity visual receptors (as defined in the current edition of the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment), residential areas, designated landscapes, valued

landscapes, designated heritage assets and Heritage Coasts (including, where relevant, impacts on the setting of designated features and areas), noting the policy in EN-1 section 5.4.53 on regional and local designation..."

... the potentially very disruptive effects of undergrounding on local communities, habitats, archaeological and heritage assets, marine environments, soil (including peat soils), hydrology, geology, and, for a substantial time after construction, landscape and visual amenity. (Undergrounding an overhead line will mean digging a trench along the length of the route, and so such works will often be disruptive – albeit temporarily – to the receptors listed above than would an overhead line of equivalent rating).

the potentially very disruptive effects of subsea cables on the seabed and the species that live in and on it, including physical damage to and full loss of seabed habitats. Cable protection can also be required where cables cross each other, or where they cannot be buried deep enough to protect them from becoming exposed. Such protection causes additional impacts that are often greater than those of the cable itself due to the large areas covered. There can also be issues where subsea cables make landfall, as much coastal land is protected habitat with environmental and heritage designations and landfall connections could cause additional disruption to coastal communities and the environment..."

Limitations to the Assessment

- 8.3.31. The construction phase assumes the Scheme is built out up to a 54 month-period in either a single, consecutive approach (development of land parcels completed one after another with the potential for breaks between development of land parcels) or through multiple stages (development of land parcels concurrently). For the multiple stage construction option, no more than two land parcels (within land parcels A-E) would be built out at the same time. Final phasing of the construction process would be determined post consent with approval of a Phasing Plan, secured by Requirement.
- 8.3.32. The ES considers two layout options, using either fixed or tracker panels. This assessment has considered the differences between these options and determined that the optionality does not impact the cultural heritage assessment and the assessment of impacts, significant of effect conclusion and/or mitigation measures provided assess both design options as there is no material difference.
- 8.3.33. All of the archaeological surveys have now been completed with a revised version of the Geoarchaeological Assessment now submitted. This is provided in **Appendix 8.3 Geoarchaeological Assessment** [[REP2-043 Document Reference 6.3.8.3 Revision 2](#)].
- 8.3.34. A magnetometry survey of the Order Limits has been completed. The results are provided in **Appendix 8.2 Geophysical Survey Report [APP-086 to APP-092]**.
- 8.3.35. A trial trench evaluation of three targeted areas within the Order Limits has been completed. The results are provided in **Appendix 8.4 Trial Trenching Report [APP-094]**.
- 8.3.36. A programme of shovel test-pitting has been completed within a number of parcels in the City of Doncaster portion of the Order Limits. The works were undertaken following a meeting with the Archaeology Officer and it was agreed that in the absence of fieldwalking a targeted scheme of test-pitting, focused on areas with potential for prehistoric artefacts would be a useful alternate approach. The test-pitting was not conducted within North Lincolnshire as areas of potential had already been trial trenched or had been subject to fieldwalking historically meaning that the resource was better understood. This assessment includes a consideration of the results

which are provided in **Appendix 8.5 Test Pitting Report [Document Reference 6.3.8.5]**.

- 8.3.37. The geoarchaeological assessment accompanying this chapter relates to an earlier iteration of the draft Order Limits. A revised version covering the Order Limits is in preparation and will be submitted as a supplementary document. The currently available results do not include information for the whole of Land Parcel C. The currently available results are provided in the **Geoarchaeology Assessment Appendix 8.3 [REP2-043 Document Reference 6.3.8.3 Revision 2]**.

8.4. Baseline Conditions

Order Limits Description and Context

- 8.4.1. This section of the chapter presents a summary of the historical and archaeological background of the Scheme, based on the **Heritage Baseline Assessment, Appendix 8.1 [Document Reference 6.3.8.1 Revision 32]** and previous archaeological works. Heritage assets considered in the assessment are illustrated on the **Designated Heritage Assets Plan Figure 8.1 [REP2-058 Document Reference 6.4.8.1]**; **Non-Designated Heritage Assets Plan Figure 8.2 [Document Reference 6.4.8.2]**; **Important Hedgerows Plan Figure 8.3 [APP-153]**.
- 8.4.2. The Study Area is generally flat and comprises of a number of parcels of agricultural land. The historic market towns of Thorne and Crowle are located to the west and east of the Order Limits respectively. The towns are located on slightly elevated ground compared to the Scheme which was historically marshland before much of the area was drained and reclaimed in the 17th century by Sir Cornelius Vermuyden following his commission from Charles I, in 1626, to drain this area.
- 8.4.3. The underlying bedrock geology of the Scheme largely comprises Triassic sandstone of the Chester Formation in the west and Triassic mudstone of the Mercia Mudstone Group to the east. The north-western part of the Order Limits, immediately adjacent to Moorends and Thorne has bedrock geology comprising Permian and Triassic sandstone of the Sherwood Sandstone Group.
- 8.4.4. There are extensive superficial deposits across the Study Area. In the north-western part of the Study Area there are deposits of the

Hemingbrough Glaciolacustrine Formation with extensive deposits of Alluvium over much of the Scheme. A band of peat is indicated to the south-west of Crowle whilst there are deposits of the Sutton Sand Formation immediately to the west of the town. The geological and geoarchaeological aspects of the Order Limits are discussed in more detail in the **Geoarchaeological Assessment, Appendix 8.3** [~~REP2-O43~~Document Reference 6.3.8.3 Revision 2].

- 8.4.5. There are no designated heritage assets located within the Order Limits.

Baseline Information

Geoarchaeological and Landscape Assessment

- 8.4.6. The geoarchaeological potential of the Order Limits has been assessed and deposits of degraded peat, sand and warp deposits have been identified. For the purposes of assessment the parts of Hatfield Chase (PEG223), Thorne Moors (PEG224) and Crowle Common (PEG225) within Order Limits have been assigned unique identification numbers. These elements have been discussed in detail as part of the **Geoarchaeological Assessment, Appendix 8.3**, [~~REP2-O43~~Document Reference 6.3.8.3 Revision 2].
- 8.4.7. The potential for an underlying land-surface pre-dating peat deposits (MLS21214) was identified during investigations undertaken in support of the Old River Don Wind Farm in the area of Turbine 6.
- 8.4.8. All of the land within the Order Limits that also lies within the Isle of Axholme LC14 policy area is recorded as Recently Enclosed Land.
- 8.4.9. This type of landscape derives from Vermuyden's 17th century reclamation project and also from a later phase of 18th and 19th-century parliamentary enclosure.
- 8.4.10. A review of hedgerows within the Order Limits has identified two hedgerows (PEG220, PEG221) that may meet the criteria for 'Important' under the Hedgerow Regulations 1997 criteria for archaeology and history as they are also recorded on Bryant's 1828 map have been identified within Order Limits in the area to the west of Belton Grange.

Prehistoric (pre-43 AD)

- 8.4.11. Mesolithic flint scatters (MLS19442; O1884/O1) and a tranchet axe (5097) have been recovered from within the Order Limits. Further finds of Mesolithic date have been recovered from elsewhere in the study area and are discussed in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.
- 8.4.12. Within the Order Limits, peat deposits and a Neolithic land surface west of Medge Hall (MLS21214) were identified during an auger survey (ELS3938) undertaken as part of the investigations to support the construction of now operational Tween Bridge Wind Farm. The auger survey was then followed by targeted trial trenching (ELS3939) although this did not identify any prehistoric artefactual material associated with the deposits but some of the environmental evidence suggested human activity nearby. There are also five findspots of flint tools (MLS940; MLS19543; MLS19574; MLS19451; MSY10053-MSY10055; MSY10094.) situated within the Order Limits. The Humberhead Levels Survey recovered two Late Neolithic flakes (HW8) as well as four other prehistoric flint tools (HW5; HW10; HW13; and HW16) from within the Order Limits. There are extensive further finds of Neolithic date that have been recovered from elsewhere in the Study Area and are discussed in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.
- 8.4.13. Findspots (MLS25883; O0563/O1) are recorded within the order limits. Finds MLS25883 and O0563/O1 are recorded as worked flints. A Bronze Age trackway and a range of Bronze Age finds have been recorded within the Study Area and are discussed in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.
- 8.4.14. There are a series of Iron Age cropmarks and finds recorded within the Study Area, these are discussed in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.
- 8.4.15. A series of undated cropmark enclosures (MLS18343) are recorded within the Order Limits, immediately to the east of Belton Grange. Targeted trial trenching was undertaken to determine the presence and survival of such features and to seek dating evidence, see **Appendix 8.4 Trial Trenching Report [APP-094]**.
- 8.4.16. The trial trenching indicated that the features identified as cropmarks existed as cut feature, below ground archaeological remains. Many of the features were considered to be post-medieval or modern in origin although

some features are likely to be of earlier date. Dating evidence was only recovered from one ditch and this appears to indicate an Iron Age or Romano-British presence within this area.

- 8.4.17. A series of cropmarks (PEG217) is visible within the Order Limits on a 2022 aerial photograph to the south-east of Grove House Farm and are interpreted as being of Iron Age or Romano-British date, these can be seen on Plate 6 of **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.

Romano-British (AD 43 – 410)

- 8.4.18. A possible Romano-British ditch and enclosure are recorded on Crowle Common (MLS20927) and a possible Fortlet and settlement at Sandtoft (MLS901; Van de Noort site HC1) and findspots (MLS17318-MLS17323; MLS19545; MLS19546; MLS19549; MLS20019; MLS20020; MLS21793; 01993/01 and 03111/01) have been identified within the Order Limits. HER records MLS20019 and MLS20020 are at the same locations as 01993/01 and 03111/01 and it seems probable that they are duplicate records for the same finds held by the two Local Authorities. The HER record MLS19549 is a duplicate of van de Noort and Ellis' findspot (C3).
- 8.4.19. Targeted trial trenching has been undertaken in relation to the cropmarks west of Crowle (MLS20927) and the settlement (MLS901). The evaluation report detailing the findings of this work is included in **Appendix 8.4 Trial Trenching Report [APP-094]**.
- 8.4.20. Extensive further Romano-British activity has been identified from across the Study Area and is discussed in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**.

Early medieval (410 AD – 1066) and Medieval (1066 – 1539)

- 8.4.21. No heritage assets of early medieval or medieval date are recorded within the Order Limits. A number of heritage assets and finds dating to these periods are recorded within the study area and discussed in the **Heritage Baseline Assessment, Appendix 8.1 [Document Reference 6.3.8.1 Revision 32]**.
- 8.4.22. During the medieval period the landscape character of the order limits was rather different to the present-day as it was dominated by Thorne Moor,

Hatfield Moor and Thorne Mere with settlement focused on the high ground at Thorne, Crowle and the Isle of Axholme. This situation changed during the post-medieval period with artificial drainage, land reclamation and warping.

Post-medieval (1540 – 1901), and Modern (1901 – present)

- 8.4.23. There are a number of post-medieval heritage assets recorded that are located within the Order Limits. The New Idle Drain (MLS19586) relates to the 17th-century drainage of the marshes and the line of the Old River Don (MLS9488) also relates to these activities. Sections of the Stainforth and Keadby Canal (MLS9485) and the former Barnsley to Barnetby Railway (MLS8828) pass through the Order Limits although none of these will be impacted by the Scheme.
- 8.4.24. The sites of several farms have also been identified within or surrounded by the Order Limits. These include the site of the 19th-century Medge Hall Farm (MLS25262); the site of the 19th-century Lover's Ground Farmstead (MLS25265); an unnamed farmstead (MLS25555); the 19th-century Plains House Farm (MLS25552); Hains Farm (MLS25280); the site of the 19th-century Boarding House Farm (MLS25281) and Belton Grange (MLS25556.)
- 8.4.25. Further heritage assets within the Order Limits have been identified from historic cartographic sources. A possible duck decoy pond (PEG200) is shown on the 1894 OS map centred on NGR 473274 412482. A cottage called 'New Zealand' (PEG201) was located at NGR 473227 412244, and these are no longer extant.
- 8.4.26. Peat extraction continued across the Study Area through the 19th and 20th centuries. The British Peat Moss Litter Company was formed in 1896 and had works at Moorends, Medge Hall, Hatfield Moors, Crowle Moors. The peat works transported the cut turves by means of light railways at Medge Hall, Hatfield and Crowle and by means of a canal at Moorends. Short sections of some of the peat extraction tramways (PEG210 and PEG211) have been identified by the geophysical survey.
- 8.4.27. The site of a series of post-medieval barns (MLS25555) within Order Limits, that lie to the west of Belton Grange Farm, is shown on historic maps and having been previously demolished their remains are visible as an area of disturbance on the LiDAR data.

- 8.4.28. A pond (PEG215) was recorded to the west of Belton Grange Farm as a D-Shaped feature with a central island on the 1853 OS map. The pond has been subsequently filled in but has shown as a very strong response on the geophysical survey data.
- 8.4.29. The impact of Vermuyden's drainage scheme and later alterations define the landscape of much of the Order Limits and Study Area. The various elements of the drainage system are widely recorded within the HER data (MLS19586–MLS19588; MLS19591; MLS2491; MLS9488.) Of these records, the warping drain (MLS2491), lies within the Order Limits.
- 8.4.30. The former bomb store at RAF Sandtoft (MLS26024) and the bombing decoy (MLS18438) lie within part of the Order Limits. The presence of the bomb store indicates the potential for unexploded ordnance to be present in the general area.
- 8.4.31. A Second World War Lancaster bomber (ND639) crashed near Windsor Lane, Crowle on 5th April 1945. All seven of the Australian crew were killed, but only five of the bodies were recovered. The North Lincolnshire HER records the putative crash site as being within the portion of the Order Limits adjacent to Marsh Road, Crowle. However, the exact location is not certain, with a location to the west of Crook O Moor also suggested, and the presence of an air crash site within this portion of the Scheme cannot be discounted at this stage (MLS25882). Previous research (undertaken to support a windfarm proposal) to locate the crash site in the Marsh Road area has not been successful.
- 8.4.32. A Halifax V bomber (EB149) crashed near Crowle on 19 March 1944. Another Halifax, (DK133), crashed near Crowle on 6 September 1944. The exact location of the crashes and the remains of the crew members are unrecorded.
- 8.4.33. Two further military aircraft crash sites (PEG206 and PEG207) are present within Order Limits. A Halifax (LK728) crashed adjacent to Moorends on 6th July 1944. The whole crew, composed of Free French Air Force, died in the crash having suffered severe damage during a bombing raid on Mimoyecques. All of the crews' remains were recovered. A Wellington X (MF556) crashed adjacent to Moorends on 6 July 1945. Neither of the pilots on board were injured.

- 8.4.34. A third military aircraft crash is also recorded in the vicinity of Thorne, its exact location is not recorded. This crash occurred on 19th September 1940 and involved a Magister (T9676) training aircraft. The pilot's remains were recovered.
- 8.4.35. The geophysical survey undertaken as part of the assessment of the Scheme has included the three known aircraft crash sites within the Order Limits and has not identified the presence of any visible remains of either an impact crater or metallic debris.
- 8.4.36. The aircraft crash sites noted above are protected by the Protection of Military Remains Act 1986 and recovery or interference with the sites would require a licence. Reference to military archives and geophysical survey may elucidate the locations of potential remains, and this aspect of the historic environment will require sensitive consideration due to the potential for human remains of relatively recent date.
- 8.4.37. An undated rectangular enclosure (PEG208) is visible on the LiDAR data. The feature is not mapped on any of the historic cartographic sources consulted and measures c. 100m east-west by 80m north-south.
- 8.4.38. An undated subcircular feature (PEG212) of uncertain origin, which measures c. 26m in diameter, has been identified by the geophysical survey within the order limits, to the north-east of Medge Hall. Nearby, a series of undated linear anomalies (PEG213), probable enclosure ditches, have also been recorded.
- 8.4.39. An undated, possible sub-rectangular enclosure (PEG214) was identified within the Order Limits adjacent to the North Idle Drain.
- 8.4.40. The corner of an undated probable rectilinear enclosure (PEG216) has been identified within the Order Limits, to the south of High Levels Bank, by the geophysical survey.
- 8.4.41. The geophysical survey has also identified a number of linear and curvilinear ditches (PEG226-PEG228; PEG234-PEG242), a possible pond (PEG229), a possible rectilinear enclosure (PEG230), two possible sub-circular enclosures (PEG232; PEG233) and a section of peat railway (PEG231) within the Order Limits. The locations of all of these historical features can be seen on **Figure 8.1 Heritage Assets Plan [REP2-058 Document Reference: 6.4.8.1]**.

Archaeological Potential

- 8.4.42. There is moderate potential for surface finds dating to the Mesolithic, Neolithic and Bronze Age to be found within the Order Limits. There is low potential for further evidence of Bronze Age forest clearance or trackways to be identified as it is likely that such remains lie at a greater depth than the works required to construct the solar farm, and the likely levels of disturbance to such remains through industrial peat extraction in the 20th century diminish the chances of their having survived.
- 8.4.43. There is moderate potential for Romano-British period archaeological remains to be identified within the Order Limits. The settlement, at Sandtoft, the enclosures to the west of Crowle and the enclosures to the east of Belton Grange are likely indicators of wider, as yet unrecorded activity within the Order Limits and Study Area.
- 8.4.44. There is low potential for any significant Medieval or Post-medieval archaeological remains to be identified within the Order Limits.
- 8.4.45. There is low potential for significant archaeological remains dating to the Modern period to be identified within the Order Limits. However, the possibility of remains relating to the Lancaster bomber that crashed to the west of Crowle and the risk of UXO to the north of Sandtoft has been identified and these have the potential to be significant and sensitive. The geophysical survey of the Order Limits has failed to identify any anomalies that appear to represent crashed military aircraft.
- 8.4.46. There is moderate potential for palaeoenvironmental deposits to be identified within the Order Limits that can improve our understanding of changes to the landscape through time.
- 8.4.47. There is potential for groundworks associated with the construction of the Scheme to adversely affect any underlying archaeological deposits. There is also potential for footings for the solar arrays to impact any buried archaeological remains. The scale of effect will be dependent upon the exact nature of the construction at any given location although where adverse effects are identified appropriate mitigation measures will be sought.

8.5. Future Baseline

- 8.5.1. The future baseline for heritage, if this Scheme were not to be constructed, is expected to change as the operational Tween Bridge Wind Farm is due to be decommissioned in 2037, during the lifetime of the Scheme.
- 8.5.2. No known additional heritage designations (Scheduled Monuments, Listed Buildings and Conservation Areas) have been identified as being proposed within the Order Limits or Study Area.

8.6. Assessment of Likely Significant Effects

- 8.6.1. This section of the ES will consider any likely significant effects upon the cultural heritage resource as a result of the Scheme.
- 8.6.2. Consideration of significant effects arising from the proposed Scheme includes the possible use of both fixed and tracking panels. These two design options are shown in **Figure 2.2a Indicative Operational Layout Plan (Fixed Solar Panel)** [~~APP-134~~[Document Reference 6.4.2.2a Revision 4](#)] and **Figure 2.2b Indicative Operational Layout Plan (Fixed & Tracker Solar Panel)** [~~APP-135~~[Document Reference 6.4.2.2b Revision 4](#)]. For the purposes of this assessment the multiple stage option with two areas being developed concurrently has been considered as the worst case scenario and it has been identified that there are no significant differences between the two design options, with regard to effects upon the archaeological and cultural heritage assets identified as sensitive to the Scheme, and this chapter has therefore provided a single impact assessment rather than separate assessments for fixed and a mixture of fixed and tracker respectively.

Construction

Direct Effects

- 8.6.3. The construction phase would not result in any direct, physical impacts to any designated heritage assets.
- 8.6.4. The physical effects of the Scheme upon the known and as yet unidentified archaeological resource would primarily result from groundworks associated with the construction of the Scheme, which is anticipated to last for up to 54 months and might include:
- Any preconstruction enabling works;

- Creation of temporary site compounds, materials laydown areas and staff accommodation such as car parking areas;
- Installation of the solar panel modules/mounting system structures – though the impact from this is minimal due to the use of push-piles;
- Creation of internal access roads;
- Insertion of security fencing and CCTV poles;
- Excavation works required for landscape mitigation features such as swales or ponds;
- Excavation of cable trenches and directional drilling access pits;
- Any stripping and excavations associated with the creation of the battery storage areas; and
- The construction of a number of substations.

Non-Designated Heritage Assets

Prehistoric and Romano-British

- 8.6.5. Peat deposits and a Neolithic land surface have been recorded to the west of Medge Hall (MLS21214) (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect the peat deposits through soil and peat removal for the construction of the construction compound, 132kV substation and BESS. The peat deposits represent part of a widespread deposit within the wider landscape and are a non-designated heritage asset of regional geographical importance.
- 8.6.6. A Romano-British ditch and enclosure (MLS20927) (Land Parcel B) is recorded on Crowle Common. The Construction Phase of the Scheme has the potential to adversely affect these remains through their removal as a result of groundworks, particularly the installation of cable routes. The ditch and enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.7. A series of anomalies (PEG249) (Land Parcel C) have been identified by the geophysical survey which may represent possible Iron Age or Romano-British settlement activity. The Construction Phase of the Scheme has the

potential to adversely affect any below ground remains of the settlement activity through their removal as a result of groundworks, particularly the installation of cable routes. The anomalies are a non-designated heritage asset of county geographical importance.

- 8.6.8. A series of undated ditches and a possible enclosure (MLS18343) (Land Parcel E) are recorded at Belton Grange, trial trenching has provided dating evidence from one of the ditches which indicated an Iron Age or Romano-British date. The Construction Phase of the Scheme has the potential to adversely affect the ditches and enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The ditches and enclosure are a non-designated heritage asset of local geographical importance.

Post-medieval

- 8.6.9. A possible duck decoy pond (PEG200) was shown on the 1894 OS map (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks, particularly the installation of cable routes. The duck decoy is a non-designated heritage asset of local geographical importance.
- 8.6.10. The site of the post-medieval Elmhirst Cottage (PEG205) lies on the west side of Thorne Waste Road (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks and foundation construction. The cottage is a non-designated heritage asset of local geographical importance.
- 8.6.11. A series of drainage ditches (PEG242), likely to be of post-medieval date, has been identified as a geophysical anomaly south of Thorne Waste (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their disturbance as a result of ecological mitigation area construction. The ditches are a non-designated heritage asset of local geographical importance.
- 8.6.12. The site of a former warping drain (MLS2491) has been identified on Crowle Common (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect the remains of the warping drain through their removal as a result of groundworks, particularly the installation of cable

routes. The warping drain is a non-designated heritage asset of local geographical importance.

- 8.6.13. The site of the post-medieval Medge Hall Farm (MLS25262) lies to the north of Crook o' Moor (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks, particularly the installation of cable routes. The farmstead is a non-designated heritage asset of local geographical importance.
- 8.6.14. The site of the post-medieval Lover's Ground Farmstead (MLS25265) is recorded north-east of Crook o' Moor Farm (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks, particularly the installation of cable routes. The farmstead is a non-designated heritage asset of local geographical importance.
- 8.6.15. The site of the post-medieval Boarding House Farmstead (MLS25281) is recorded north of High Levels Bank (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks, particularly the installation of cable routes. The farmstead is a non-designated heritage asset of local geographical importance.
- 8.6.16. The site of the post-medieval Sandhill Cottage (PEG202) lies on the south side of the Keadby Canal, west of Maud's Bridge (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks, particularly the installation of cable routes. The cottage is a non-designated heritage asset of local geographical importance.
- 8.6.17. The site of the post-medieval Redhouse Cottage (PEG203) lies on the south side of the Keadby Canal, west of Maud's Bridge (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks, particularly the installation of cable routes. The cottage is a non-designated heritage asset of local geographical importance.
- 8.6.18. The remains of Crow Tree Cottage (PEG246) have been identified as a geophysical anomaly to the south of Low Levels Bank (Land Parcel D). The

Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks, particularly the installation of cable routes. The cottage is a non-designated heritage asset of local geographical importance.

- 8.6.19. The site of a post-medieval un-named Farmstead (MLS25555) lies to the south-west of Belton Grange (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks, particularly the installation of cable routes. The farmstead is a non-designated heritage asset of local geographical importance.
- 8.6.20. The site of a post-medieval pond (PEG215) is recorded west of Belton Grange (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the pond through their removal as a result of groundworks, particularly the installation of cable routes. The pond is a non-designated heritage asset of local geographical importance.

Modern

- 8.6.21. The buried remains of a crashed Halifax bomber (PEG206) are recorded adjacent to Thorne Waste Drain Road (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect the remains through their removal as a result of groundworks, particularly the installation of cable routes. The remains of the aircraft are a non-designated heritage asset of county geographical importance and protected by the provisions of the Protection of Military Remains Act (1986).
- 8.6.22. The buried remains of a crashed Wellington bomber (PEG207) are recorded adjacent to Thorne Waste Drain Road (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect the remains through their removal as a result of groundworks, particularly the installation of cable routes. The remains of the aircraft are a non-designated heritage asset of county geographical importance and protected by the provisions of the Protection of Military Remains Act (1986).
- 8.6.23. The buried remains of a crashed Lancaster bomber (MLS25882) are possibly situated within the Scheme (Land Parcel B). The Construction

Phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks, particularly the installation of cable routes. The remains of the aircraft are a non-designated heritage asset of county geographical importance and protected by the provisions of the Protection of Military Remains Act (1986).

- 8.6.24. The buried remains of a peat tramway (PEG211) have been identified by the geophysical survey to the west of Crowle (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the tramway through their removal as a result of groundworks, particularly the installation of cable routes. The tramway is a non-designated heritage asset of local geographical importance.
- 8.6.25. A peat railway line (PEG231) has been identified as a geophysical anomaly on Crowle Common (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the railway through their removal as a result of groundworks, particularly the installation of cable routes. The railway is a non-designated heritage asset of local geographical importance.
- 8.6.26. The former bomb store at RAF Sandtoft (MLS26024) lies immediately to the north of the M180 (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks, particularly the installation of cable routes. The remains of the bomb store are a non-designated heritage asset of county geographical importance.
- 8.6.27. A bombing decoy (MLS18438) was located immediately to the north of the M180, in the location of the later RAF Sandtoft bomb store (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks, particularly the installation of cable routes. The remains of the bombing decoy are a non-designated heritage asset of county geographical importance.

Undated Assets

- 8.6.28. A linear ditch (PEG226) has been identified as a geophysical anomaly to the east of Moorends (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of

the ditch through their removal as a result of groundworks, particularly the installation of cable routes. The ditch is a non-designated heritage asset of local geographical importance.

- 8.6.29. A linear ditch (PEG227) has been identified as a geophysical anomaly to the east of Moorends (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditch through their removal as a result of groundworks, particularly the installation of cable routes. The ditch is a non-designated heritage asset of local geographical importance.
- 8.6.30. Two parallel curvilinear ditches (PEG228) have been identified as a geophysical anomaly to the east of Moorends (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of county geographical importance.
- 8.6.31. A possible pond (PEG229) has been identified as a geophysical anomaly to the east of Moorends (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the pond through their removal as a result of groundworks, particularly the installation of cable routes. The pond is a non-designated heritage asset of local geographical importance.
- 8.6.32. A possible rectilinear enclosure (PEG230) has been identified as a geophysical anomaly south of Thorne Waste (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.33. Linear ditches (PEG241) have been identified as a geophysical anomaly south of Thorne Waste (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.

- 8.6.34. A curvilinear ditch (PEG243) has been identified as a geophysical anomaly to the east of Thorne (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks for the construction of an access road. The ditch is a non-designated heritage asset of local geographical importance.
- 8.6.35. A curvilinear ditch (PEG244) has been identified as a geophysical anomaly to the east of Thorne (Land Parcel A). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditch is a non-designated heritage asset of local geographical importance.
- 8.6.36. An undated enclosure (PEG208) is visible in LiDAR images west of Crook o' Moor (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.37. An undated enclosure (PEG212) is visible in LiDAR images to the west of Crowle (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.38. An undated enclosure (PEG213) is visible in LiDAR images to the west of Crowle (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.39. An undated cropmark enclosure visible on aerial photograph (PEG217) has been identified within the Scheme, to the south-east of Grove House Farm (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect the deposits through the presence of an access route over this area. The cropmarks are a non-designated heritage asset of county geographical importance.

- 8.6.40. A series of linear ditches (PEG247) have been identified as a geophysical anomaly to the west of Jaque's Bank (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.
- 8.6.41. A possible rectilinear enclosure (PEG248) has been identified as a geophysical anomaly to the west of Jaque's Bank (Land Parcel C). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of local geographical importance.
- 8.6.42. A small sub-circular enclosure (PEG233) has been identified as a geophysical anomaly adjacent to Low Levels Bank (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.43. A series of ditches (PEG234) has been identified as a geophysical anomaly adjacent to Low Levels Bank (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.
- 8.6.44. A series of ditches (PEG235) has been identified as a geophysical anomaly adjacent to Low Levels Bank (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.
- 8.6.45. A series of ditches (PEG236) has been identified as a geophysical anomaly adjacent to the north of the M180 (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks,

particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.

- 8.6.46. Two parallel curvilinear ditches (PEG237) have been identified as a geophysical anomaly north-west of Stoupersgate Farm (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of county geographical importance.
- 8.6.47. Two parallel linear ditches (PEG238) have been identified as a geophysical anomaly south of Levels Farm (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of county geographical importance.
- 8.6.48. A series of ditches (PEG239) have been identified as a geophysical anomaly east of Brier Hills Farm (Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.
- 8.6.49. A series of stakes, interpreted as part of an undated wooden building (MLS917), were identified c. 3.5m below ground level at Belton Grange in 1975 (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect the timber stakes through disturbing them as a result of groundworks, particularly the installation of cable routes. The stakes are a non-designated heritage asset of local geographical importance.
- 8.6.50. An undated enclosure (PEG214) is visible in LiDAR images south of Dirtiness (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.

- 8.6.51. An undated enclosure (PEG216) has been identified by the geophysical survey to the south of High Levels Bank (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.52. A sub-circular enclosure (PEG232) has been identified as a geophysical anomaly at Dirtness (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks, particularly the installation of cable routes. The enclosure is a non-designated heritage asset of county geographical importance.
- 8.6.53. Two linear ditches which define a possible trackway (PEG240) have been identified as a geophysical anomaly west of Plains House Farm (Land Parcel E). The Construction Phase of the Scheme has the potential to adversely affect any below ground remains of the ditches through their removal as a result of groundworks, particularly the installation of cable routes. The ditches are a non-designated heritage asset of local geographical importance.

Geoarchaeological and Landscape Assets

- 8.6.54. The approximate extent of the lake known as Thorne Mere (PEG209) is shown on historic mapping (see Plate 10 in **Appendix 8.1 Heritage Baseline Assessment [Document Reference 6.3.8.1 Revision 32]**). The mere extended over a wide area including parts of Land Parcels C and D. The Construction Phase of the Scheme has the potential to adversely affect the lake deposits through the various works required over this area. The lake deposits are a non-designated heritage asset of regional geographical importance..
- 8.6.55. The extent of Hatfield Chase (PEG223) includes a wide area including some land within the south-western part of the Scheme (loosely Land Parcel D). The Construction Phase of the Scheme has the potential to adversely affect the geoarchaeological deposits through the various works required over this area. The Chase is a non-designated heritage asset of county geographical importance.

- 8.6.56. Thorne Moors (PEG224) includes a wide area including some land within the north-western part of the Scheme (loosely Land Parcels A and C). The Construction Phase of the Scheme has the potential to adversely affect the geoarchaeological deposits through the various works required over this area. The Moor is a non-designated heritage asset of county geographical importance.
- 8.6.57. Crowle Common (PEG225) includes a wide area including some land within the north-eastern part of the Scheme (Land Parcel B). The Construction Phase of the Scheme has the potential to adversely affect the deposits through the various works required over this area. The Common is a non-designated heritage asset of county geographical importance.
- 8.6.58. The direct effects of the Scheme upon the known and potential archaeological resource within the Order Limits would be permanent, irreversible and adverse in those areas of the Scheme required for the construction of substations, BESS facilities and cable trenching and are likely to result in loss of heritage significance of any potential buried archaeological features or deposits. Where the construction is limited to only the solar arrays it will have a limited, adverse effect upon the known and potential archaeological resource within these areas of the Order Limits.
- 8.6.59. As a result of the construction activities, required for the substations, BESS facilities and cable trenching the archaeological remains are likely to be removed in those parts of the Order Limits. Within the footprint of the Scheme, this includes a number of known and potential non-designated heritage assets of archaeological interest.
- 8.6.60. The construction activities associated with below ground cable routes, directional drilling access pits, temporary compounds, BESS and substations would lead to harm or total loss of significance of these non-designated heritage assets and without the implementation of appropriate mitigation, this would result in Major Adverse effects to the three aircraft crash sites within Order Limits and Moderate Adverse effects to a number of non-designated assets of county geographical importance (**Significant**).
- 8.6.61. The construction activities associated with the installation of solar arrays would lead to very limited harm or loss of significance of these non-designated heritage assets and without the implementation of appropriate mitigation, this would result in Minor Adverse effects (**Not Significant**).

Indirect Effects

- 8.6.62. The Indirect effects of the Scheme upon the built heritage resource during the Construction Phase would primarily result from activities associated with the construction of the Scheme, which might include:
- Movement of construction vehicles within the Order Limits and associated noise generated from this;
 - Increased vehicle movements to and from the Scheme;
 - Construction activity within the Order Limits.
- 8.6.63. Indirect effects have been identified in relation to four designated built heritage assets, three non-designated built heritage assets and an area of Special Historic Landscape Interest.

Listed Buildings

- 8.6.64. Dirtiness Cottage (1083285) is a Grade II Listed Building, a designated asset of less than the highest significance which lies c. 50m north of Land Parcel E. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its rural setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in less than substantial harm at the lowest end of the spectrum and will be temporary.
- 8.6.65. Dirtiness Pumping Station (1083284) is a Grade II Listed Building, a designated asset of less than the highest significance which lies c. 15m north of Land Parcel E. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its rural setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in less than substantial harm at the lowest end of the spectrum and will be temporary.
- 8.6.66. Grove House Farmhouse (1192943) is a Grade II Listed Building, a designated asset of less than the highest significance which lies c. 15m west of the nearest part of Land Parcel C. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased

traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings and its, functional, agricultural relationship with the land. These adverse effects will result in less than substantial harm at the lowest end of the spectrum and will be temporary.

- 8.6.67. Sandhill Farmhouse (1151565) is a Grade II Listed Building, a designated asset of less than the highest significance which lies c. 60m south of Land Parcel C. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily interrupt intervisibility between the asset and its rural surroundings and its, functional, agricultural relationship with the land. These adverse effects will result in less than substantial harm at the lowest end of the spectrum and will be temporary.

Area of Special Historic Landscape Interest – non-designated asset

- 8.6.68. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an Area of Special Historic Landscape Interest which incorporates a small part of Land Parcel E. The Construction Phase of the Scheme has the potential to directly adversely affect the significance of the small part of the Area of Special Historic Landscape Interest, Recently Enclosed Land character area that lies within the Order Limits through the introduction of construction activities, increased traffic and personnel to the area. These adverse effects will result in minor harm and will be temporary.

Non-Designated Assets

- 8.6.69. Belton Grange (PEG033) is a non-designated heritage asset that is surrounded by Land Parcel E. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.
- 8.6.70. Dale Mount Farm (PEG064) is a non-designated heritage asset which lies c. 75m east of the nearest part of Land Parcel D. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb

the tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.

- 8.6.71. Drain House Farm (PEG076) is a non-designated heritage asset which lies c. 20m east of the nearest part of Land Parcel D. The Construction Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.

Operation

Archaeological Remains

- 8.6.72. No direct impacts upon the buried archaeological remains are anticipated following the completion of the Construction Scheme. As such, these receptors are scoped out of discussion as part of the Operational Phase.

Listed Buildings

- 8.6.73. Indirect effects have been identified in relation to four designated built heritage assets, three non-designated built heritage assets and an area of Special Historic Landscape Interest.

Dirtiness Cottage

- 8.6.74. The operational Scheme will be in proximity to the Grade II Listed Dirtiness Cottage (1083285), which is an asset of less than the highest significance which lies c. 50m north of Land Parcel E. The significance of the asset is primarily derived from its physical form which displays its architectural value as a mid-19th century gate lodge. It also derives some significance from its historical value due to its connection to the locally prominent Brunyee family. The setting of the asset is formed by its relationship to the adjacent bridge and driveway that formed the southern access to Sand Hall and from its rural surroundings to the south.
- 8.6.75. Views from the asset to the south are blocked by a deciduous hedge when it is in leaf but limited views to the south, including parts of the Scheme are apparent in the winter. There is however, no historic or current association between the asset and the land within the Order Limits. The temporary change introduced by the operational Scheme will adversely affect the

significance of the asset as a result of the temporary change in character from agriculture to solar, however the solar scheme will still allow the agricultural former function of the land to be legible. The magnitude of effect will be less than substantial, at the lower end of the spectrum.

Dirtiness Pumping Station

- 8.6.76. The operational Scheme will be in proximity to the Grade II Listed Dirtiness Pumping Station (1083284), an asset of less than the highest significance, which lies c. 15m north of Land Parcel E. The heritage significance of Dirtiness Pumping Station is principally embodied in its physical fabric which best displays the architectural interest as a 19th-century pumping station.
- 8.6.77. Parts of the Order Limits are intervisible with the pumping station. There is a functional relationship between the pumping station and the fields within the Order Limits to the south as the pumps were established to maintain the land to be dry enough for agricultural use. The temporary change introduced by the operational Scheme will adversely affect the significance of the asset as a result of the change in character from agriculture to solar. However, the solar scheme will still allow the agricultural former function of the land to be legible. The magnitude of effect will be less than substantial harm, at the lower end of the spectrum.

Grove House Farmhouse

- 8.6.78. The operational Scheme will be in proximity to the Grade II Listed Grove House Farmhouse (1192943) which is a designated asset of less than the highest significance which lies c. 15m west of the nearest part of Land Parcel C. The significance of the asset is primarily derived from its physical form which displays its architectural value as a farmhouse with 18th-century origins that was extended and altered in the 19th century. The setting of the asset is formed by the associated complex of farm buildings and the surrounding agricultural landscape which provide the agrarian context to the farmhouse. Parts of the Order Limits to the north and east of the asset are recorded by the 1840 Thorne tithe apportionment as part of the farm owned and managed by George Kitching who resided at Grove House. Further land within the Order Limits that lies to the south-east of the asset is recorded on the 1841 Hatfield tithe apportionment as being occupied by George Kitching. Views from the farmhouse are restricted by interceding

buildings to the north and east meaning there is no intervisibility with the portions of the Scheme which lie in these directions.

- 8.6.79. There is intervisibility between the part of the Scheme which lies to the south-east of the asset and the principal elevation of the farmhouse. The western gable end and rear elevation are partially visible from the part of the Scheme that lies to the north-west of the farmhouse. However, there are no windows that overlook this part of the Scheme. There is an historic association between parts of the Order Limits and the asset. The temporary change in the character of the land from agricultural to energy generation introduced by the operational Scheme will adversely affect the significance of the asset as the temporary operational Scheme will change views of the asset within its rural setting and its, functional, agricultural relationship with the land. The magnitude of effect will be less than substantial harm, at the lower end of the spectrum.

Sandhill Farmhouse

- 8.6.80. The operational Scheme will be in proximity to the Grade II Listed Sandhill Farmhouse (1151565) which is a designated asset of less than the highest significance which lies c. 60m south of Land Parcel C. The significance of the asset is primarily derived from its physical form which displays its architectural value as a farmhouse that was built c. 1800. The setting of the asset is formed by the surrounding agricultural landscape which provides the agrarian context to the farmhouse. Views from the principal elevation of the farmhouse face south and look along the driveway which connects the farmhouse to the A18 road. Long distance views in this direction incorporate agricultural land, presently in arable cultivation, including parts of the Order Limits. There is no historic or current association between the asset and land within the Order Limits. The temporary change introduced by the operational Scheme will adversely affect significance of the asset as a result of the change in character from agriculture to renewable energy, however, the Scheme will still allow the agricultural former function of the land to be legible. The magnitude of effect will be less than substantial harm, at the lower end of the spectrum.

Special Historic Landscape Interest– non-designated asset

- 8.6.81. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an area of Special Historic Landscape Interest which incorporates a small part of Land Parcel E. During the operational phase of the Scheme this land is proposed

for solar panels which will temporarily change (over the 40-year operational life of the Scheme) the land use from arable. Until the proposed hedge planting is mature (approx. 15 years) there will be limited visibility of the arrays from some neighbouring parts of the policy area. Once the proposed hedge planting has reached its mature height this limited visibility will reduce further/no visibility of the solar panels. Solar panel arrays are visually permeable as they sit on top of the land and therefore during the operational phase it remains possible to still see and appreciate the land beneath. The Operation Phase of the Scheme has the potential to directly adversely affect the significance of the asset through the temporary introduction of solar BV modules into a small part of the Policy Area (within Land Parcel E). These adverse effects will result in minor harm and will be temporary.

Non-Designated Heritage Assets

Belton Grange

- 8.6.82. The operational Scheme will be in proximity to Belton Grange (PEG033) which is a non-designated heritage asset, that is surrounded by Land Parcel E. The significance of the asset is primarily derived from its physical form which displays its architectural value as an early 19th-century farmstead. The setting of the asset is formed by its associated farm buildings and its secluded, rural surroundings which provide the asset's agrarian context.
- 8.6.83. The asset is surrounded by the Order Limits on all sides. However, the asset is largely screened by mature hedgerows and farm-buildings which screen views to the west, south and east entirely. Views to the north are largely screened but views along the driveway are intervisible with parts of the Scheme which lie adjacent to it on the west and east. The farm is located on former common land that was enclosed in 1812. As the land was formerly common the extent of the historic land holdings associated with the farm are not clearly defined on historic sources such as the tithe apportionment. However, it seems likely that the farm held the former common lands by which it is surrounded, and which encompass parts of the Scheme. The temporary change introduced by the operational Scheme will adversely affect Belton Grange, as a result of the change in character from agriculture to renewable energy. However, the Scheme will still allow the agricultural former function of the land to be legible. The magnitude of effect will be minor harm.

Dale Mount Farm

- 8.6.84. The operational Scheme will be in proximity to Dale Mount Farm (PEG064) which is a non-designated heritage asset which lies c. 75m east of the nearest part of Land Parcel D. The significance of the asset is primarily derived from its physical form which displays its architectural value as a 19th century farmhouse. The setting of the asset is formed by its associated farm buildings and its rural surroundings which provide its agrarian context. The asset is screened on all sides by a substantial hedge with a break in the hedge to the north-west of the asset providing limited intervisibility with part of the Scheme. Some land within the Scheme has an historical, and current, association with the asset as it forms part of the landholding. The temporary change of the character of the land introduced by the operational Scheme will adversely affect the significance of the asset as the operational Scheme will change views of the asset within its rural setting. The magnitude of effect will be minor harm.

Drain House Farm

- 8.6.85. The operational Scheme will be in proximity to Drain House Farm (PEG076), which is a non-designated heritage asset which lies c. 20m east of the nearest part of Land Parcel D. The significance of the asset is primarily derived from its physical form which displays its architectural value as a post-medieval farmhouse with an associated complex of barns and farm buildings. The setting of the asset is formed by its associated farm buildings and its rural surroundings which provide its agrarian context. The building is set back from the road with its principal elevation facing north along the drive which connects to the A18, High Levels Bank.
- 8.6.86. To the north views are restricted by tree cover and an interceding row of modern labourers' cottages. To the west the garden of the farmhouse is bounded by a substantial hedge and to the east there is a sparse hedge which provides intermittent screening. Therefore, the asset is intervisible with elements of the Scheme to the north and east. There is an historic and current association between the asset and some of the land within the Scheme. The temporary change in character introduced by the operational Scheme will adversely affect the significance of the asset as the operational Scheme will alter views of the asset within its rural setting. The magnitude of effect will be minor harm.

Decommissioning

- 8.6.87. It is expected that the decommissioning of the Scheme will result in no additional impact to any buried archaeological resource subsequent to the impacts of the Construction Phase.
- 8.6.88. As with the construction phase there may be some temporary impacts during the Decommissioning Phase upon the settings of designated heritage assets (i.e., scaffolding; movement of machinery), these impacts will be limited and temporary. Following the completion of the decommissioning of the Scheme there will be a neutral impact to the setting of these assets as they will be returned to their pre-development condition.
- 8.6.89. Indirect effects have been identified in relation to four designated built heritage assets, three non-designated built heritage assets and an area of Special Historic Landscape Interest.

Listed Buildings

Dirtiness Cottage

- 8.6.90. Dirtiness Cottage (1083285) is a Grade II listed building, a designated asset of less than the highest significance, which lies c. 15m north of Land Parcel E. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the rural setting and tranquil seclusion of this asset. These adverse effects will result in less than substantial harm, at the lower end of the spectrum and will be temporary.

Dirtiness Pumping Station

- 8.6.91. Dirtiness Pumping Station (1083284) is a Grade II listed building, a designated asset of less than the highest significance which lies c. 15m north of Land Parcel E. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its rural setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in less than substantial harm, at the lower end of the spectrum and will be temporary.

Grove House Farmhouse

- 8.6.92. Grove House Farmhouse (1192943) is a Grade II listed building, a designated asset of less than the highest significance which lies c. 15m west of the nearest part of Land Parcel C. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings and its, functional, agricultural relationship with the land. These adverse effects will result in less than substantial harm, at the lower end of the spectrum and will be temporary.

Sandhill Farmhouse

- 8.6.93. Sandhill Farmhouse (1151565) is a Grade II listed building, a designated asset of less than the highest significance which lies c. 60m south of Land Parcel C. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings and its, functional, agricultural relationship with the land. These adverse effects will result in less than substantial harm, at the lower end of the spectrum and will be temporary.

Special Historic Landscape Interest– non-designated asset

- 8.6.94. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an area of Special Historic Landscape Interest which incorporates a small part of Land Parcel E. The Decommissioning Phase of the Scheme has the potential to directly adversely affect the significance of the small part of the Area of Special Historic Landscape Interest, Recently Enclosed Land character area that lies within the Order Limits through the introduction of solar array decommissioning activities, increased traffic and personnel to the area. These adverse effects will result in minor harm.

Non-Designated Assets

Belton Grange

- 8.6.95. Belton Grange (PEG033) is a non-designated heritage asset that is surrounded by Land Parcel E. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic

and personnel to its setting which will temporarily disturb the rural setting and tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.

Dale Mount Farm

- 8.6.96. Dale Mount Farm (PEGO64) is a non-designated heritage asset which lies c. 75m east of the nearest part of Land Parcel D. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the rural setting and tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.

Drain House Farm

- 8.6.97. Drain House Farm (PEGO76) is a non-designated heritage asset which lies c. 20m east of the nearest part of Land Parcel D. The Decommissioning Phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the rural setting and tranquil seclusion of this asset. These adverse effects will result in minor harm and will be temporary.

8.7. Mitigation, Enhancement and Residual Effects

- 8.7.1. Where significant effects are anticipated, mitigation may be necessary to adequately address these effects, in order to reduce or offset the harm (effect on) to the importance (significance) of non-designated heritage assets.

Mitigation by Design

- 8.7.2. Direct adverse impacts have been identified in relation to the archaeological resource within the Order Limits by this assessment. These impacts will affect the resource during the construction phase and therefore any mitigation considered necessary would be implemented prior to or during this phase of development.
- 8.7.3. Following targeted trial trenching the footprint of the Romano-British settlement (MLS901) (Land Parcel E) has been excluded from intrusive construction works to allow for the preservation in situ of this non-

designated heritage asset. The extent of the preservation in situ area is shown on Figure 1 in Appendix 2 of **Appendix 8.6 Outline Archaeological Mitigation Strategy [Document Reference 6.3.8.6 Revision 32]**.

- 8.7.4. Indirect adverse effects have been identified in relation to 9No. built heritage assets during the Construction and Operational phases of the Scheme. A combination of screening through appropriate boundary treatments and offsets to retain suitable margins around/or views from the assets to minimise the adverse effects upon their settings has been embedded within the design. It is acknowledged planted boundary hedges will take a number of years to reach maturity and that the implications of this are that adverse effects will initially be slightly more significant than once the hedges are fully grown.

Additional Mitigation

- 8.7.5. An **Outline Archaeological Mitigation Strategy** accompanies this assessment, **Appendix 8.6 [Document Reference 6.3.8.6 Revision 32]**.
- 8.7.6. It is anticipated that the required **Outline Archaeological Mitigation Strategy Appendix 8.6 [Document Reference 6.3.8.6 Revision 32]** will necessitate a proportionate programme of further archaeological survey. Any such programme would be agreed in liaison with the archaeological advisors to North Lincolnshire and the City of Doncaster Council following the completion of the ongoing geophysical survey.
- 8.7.7. Opportunities to further minimise adverse effects upon the buried archaeological resource are presently under consideration. These opportunities include the use of no-dig foundations and preservation in situ, mitigation by record for areas is also under consideration.
- 8.7.8. The programme of appropriate and proportionate additional mitigation, to be determined in consultation with the archaeological advisors, is secured as requirement 12 to the approved **Development Consent Order [Document Reference 3.1 Revision 64]**. Such mitigation strategies will be designed to be proportionate to the significance of the individual assets affected and will ensure that they are subject to preservation by record at an appropriate stage in the development process. This will partially offset their loss through the knowledge gained through the investigations. For the archaeological remains the mitigation may include, as appropriate, excavation, strip map and sample investigation, or archaeological

monitoring of ground works during construction (known as a 'watching brief'), with appropriate post-excavation analysis and dissemination of results.

- 8.7.9. The mitigation strategies discussed above will partially offset the loss of the archaeological resource through the knowledge gained in the course of the investigations. This will, to an extent, reduce the effects on archaeological remains.

Table 8-6: Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By legal agreement	By DCO Requirement
1	Designated heritage assets subject to settings impact	X		
2	Non-designated heritage assets subject to settings impact	X		
3	Non-designated heritage assets subject to direct impact	X		X

Enhancements.

- 8.7.10. An additional benefit offered by archaeological works will be implemented following the investigations, including the promotion of local history in schools and local communities, and the enhancement of the public's understanding of past activities in their local area through appropriate signage, interpretation, exhibitions and/or talks.

8.8. Residual Effects

Construction Phase

- 8.8.1. Additional mitigation will be provided with regards to the identified Construction Phase effects on the archaeological resource. Therefore, the significance of effects which may arise during the construction of the Scheme will change when compared with that set out in the 'Likely Significant Effects' section of the chapter.

- 8.8.2. The residual significance of effects on identified areas of archaeological potential arising from the construction of below ground cable routes, directional drilling access pits, temporary compounds, BESS and substations is considered to be permanent Moderate Adverse (**Not Significant**).
- 8.8.3. The residual significance of effects on identified areas of archaeological potential arising from the construction of solar arrays is considered to be permanent Minor Adverse (**Not Significant**).
- 8.8.4. No additional mitigation is required with regards to the identified Construction Phase effects in relation to the built heritage assets. Therefore, the residual effects of the Operational Phase of the Scheme remain as set out in the 'Likely Significant Effects' section of the chapter:
- Dirtiness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
 - Dirtiness Pumping Station, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
 - Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
 - Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- 8.8.5. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an Area of Special Historic Landscape Interest. The Construction Phase of the Scheme has the potential to directly adversely affect the significance of the asset through the temporary introduction of construction activities, increased traffic and personnel to the area. These adverse effects will result in **minor harm**.
- 8.8.6. Minor adverse effects have been identified during the construction phase of the Scheme in relation to the non-designated built heritage assets:
- Belton Grange,

- Dale Mount Farm,
- Drain House Farm,

8.8.7. The identified effects are not considered to be significant.

Operational Phase

8.8.8. No additional mitigation is required with regards to the identified effects which may arise during the Operational Phase. Therefore, the residual effects of the Operational Phase of the Scheme remain as set out in the 'Likely Significant Effects' section of the chapter:

- Dirtiness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Dirtiness Pumping Station, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)

8.8.9. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an Area of Special Historic Landscape Interest. The Operational Phase of the Scheme has the potential to directly adversely affect the significance of the asset through the temporary introduction of solar arrays. These adverse effects will result in **minor harm**.

8.8.10. Minor adverse effects have been identified during the operation phase of the Scheme in relation to the non-designated built heritage assets:

- Belton Grange,
- Dale Mount Farm,
- Drain House Farm,

8.8.11. The identified effects are not considered to be significant.

Decommissioning Phase

8.8.12. No additional mitigation is required with regards to the identified effects which may arise during the Decommissioning Phase of the Scheme. Therefore, the residual effects of the Decommissioning Phase remain as set out in the 'Likely Significant Effects' section of the chapter.

- Dirtiness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Dirtiness Pumping Station, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)
- Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm at the lower end of the spectrum (**Not Significant**)

8.8.13. The Isle of Axholme LC14 Policy Area (PEG218) is designated as an Area of Special Historic Landscape Interest. The Decommissioning Phase of the Scheme has the potential to directly adversely affect the significance of the asset through the introduction of solar array decommissioning activities, increased traffic and personnel to the area. These adverse effects will result in **minor harm**

8.8.14. Minor adverse effects have been identified during the decommissioning phase of the Scheme in relation to the non-designated built heritage assets:

- Belton Grange,
- Dale Mount Farm,
- Drain House Farm,

- 8.8.15. The identified effects are not considered to be significant.
- 8.8.16. The effects identified above would remain unchanged under the future baseline conditions.

8.9. Cumulative and In-Combination Effects

- 8.9.1. An assessment of these effects is included in **Chapter 17, Cumulative and In Combination Effects**.

8.10. Summary

Introduction

- 8.10.1. This Chapter has considered the likely significant effects of the Scheme upon the cultural heritage resource, including buried archaeological remains within the Order Limits and heritage assets (including Scheduled Monuments and Listed Buildings) located within the wider Study Area. It has been established that subject to appropriate mitigation being implemented, the Scheme would not result in any significant adverse effects upon the cultural heritage resource within the Order Limits and in its surroundings.

Baseline Conditions

- 8.10.2. The heritage resource which has been considered within this Chapter includes the known and potential buried archaeological remains which may be affected as part of the construction stage and heritage assets, located within the Order Limits and the Study Area, which could potentially be affected as a result of change within the settings of these assets introduced as a result of the construction, operation and decommissioning of the Scheme.

Likely Residual Significant Effects

Construction Phase

- 8.10.3. It has been established that the construction phase of the Scheme has the potential to affect known, non-designated, archaeological remains associated with possible prehistoric Romano-British, post-medieval and modern archaeological remains as well as potential previously unrecorded archaeological remains. The groundworks associated with the construction

of the below ground cable routes, directional drilling access pits, temporary compounds, BESS and substations within the Scheme have the potential to truncate or totally remove the archaeological remains within their footprint. Such effects would result in harm to or total loss of significance of these buried archaeological features. An appropriate programme of mitigation by design and additional mitigation (as required) will allow the magnitude of effect to be Moderate harm (**not significant**). The installation of the solar arrays has the potential to result in localised adverse effects upon archaeological deposits lying beneath the push pin foundations. An appropriate programme of mitigation by design and additional mitigation (as required) will allow the magnitude of effect to be Minor harm (**not significant**).

- 8.10.4. The construction phase of the Scheme has the potential to affect the settings of four designated heritage assets and three non-designated built heritage assets and one No. Area of Special Historic Landscape Interest. Such effects would result in harm to the significance of these assets, leading to Less than Substantial Residual Harm at the lower end of the spectrum in relation to the designated assets and Minor Residual Harm in relation to the non-designated assets (**Not Significant**).

Operational Phase

- 8.10.5. The operational phase of the Scheme has the potential to affect the settings of four designated heritage assets and three non-designated built heritage assets and one Area of Special Historic Landscape Interest. Such effects would result in harm to the significance of these assets, leading to Less than Substantial Residual Harm at the lower end of the spectrum in relation to the designated assets and Minor Residual Harm in relation to the non-designated assets.

Decommissioning Phase

- 8.10.6. The decommissioning phase of the Scheme has the potential to affect the settings of four designated heritage assets and three non-designated built heritage assets and one Area of Special Historic Landscape Interest. Such effects would result in harm to the significance of these assets, leading to Less than Substantial Residual Harm at the lower end of the spectrum in relation to the designated assets and Minor Residual Harm in relation to the non-designated assets.

Mitigation and Enhancement

- 8.10.7. Designed mitigation in relation to built heritage assets has been agreed and will entail a combination of screening through appropriate boundary treatments and offsets to retain suitable margins around/or views from the assets to minimise the adverse effects upon their settings.
- 8.10.8. Opportunities to minimise adverse effects upon the buried archaeological resource have also been considered. Site investigation work has determined that some areas of the Site, such as the Romano-British settlement (MLS901) within Land Parcel E, will have no intrusive construction to enable *in situ* preservation of the archaeological remains in this area. It is envisaged that buried remains may be able to be preserved in situ in some parts of the Order Limits through the use of ballast foundations.
- 8.10.9. A proportionate programme of archaeological survey and mitigation, by means of field investigation and recording, will be followed by an appropriate and proportionate mitigation strategy that will ensure that they are subject to preservation by record at an appropriate stage in the development process. The appropriate and proportionate additional mitigation, to be determined in consultation with the archaeological advisors, is secured as requirement 12 to the approved **Development Consent Order [Document Reference 3.1 Revision 64]**. This will partially offset their loss through the knowledge gained through the investigations. For the archaeological remains the mitigation may include, as appropriate, excavation, strip map and sample investigation, or archaeological monitoring of ground works during construction (known as a watching brief), with appropriate post-excavation analysis and dissemination of results.

8.11. Conclusion

- 8.11.1. If appropriate mitigation measures, as discussed above, are implemented, the Scheme is considered acceptable and there would be no adverse significant residual effects in relation to non-designated archaeological remains.
- 8.11.2. **Table 8-8** provides a summary of effects, mitigation and residual effects.

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Table 8-7: Summary of Effects, Mitigation and Residual Effects

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
Construction								
Peat deposits and a Neolithic land surface (MLS21214)	Direct	Permanent	Non- designated heritage asset	Low Harm	Regional	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
A Romano- British ditch and enclosure (MLS20927)	Direct	Permanent	Non- designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Site of warping drain (MLS2491)	Direct	Permanent	Non- designated	Low Harm	Local	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)

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			heritage asset					
Thorne Mere (PEG209)	Direct	Permanent	Non-designated heritage asset	Low Harm	Regional	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Site of Medge Hall Farm (MLS25262)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Site of Lover's Ground Farm (MLS25265)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Site of Boarding House Farm (MLS25281)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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Site of un-named Farmstead (MLS25555)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Undated ditches and enclosure (MLS18348)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Wooden Stakes (Possible wooden building (MLS917)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Site of duck decoy pond (PEG200)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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Site of Sandhill Cottage (PEG202)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Site of Redhouse Cottage (PEG203)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Site of Elmhirst Cottage (PEG205)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Undated Enclosure (PEG208)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)

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Remains of peat tramway (PEG211)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Undated Enclosure (PEG212)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Undated Enclosure (PEG213)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Undated Enclosure (PEG214)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Site of Pond (PEG215)	Direct	Permanent	Non-designated	Low Harm	Local	Minor Harm	None	Minor Harm

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			heritage asset			(Not Significant)		(Not Significant)
Undated Enclosure (PEG216)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Site of the bomb store at RAF Sandtoft (MLS26024)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Site of a bombing decoy (MLS18438)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
The buried remains of a crashed Lancaster	Direct	Permanent	Non-designated heritage asset	High Harm	County	Major Harm (Significant)	Additional archaeological works undertaken in accordance	Moderate Harm (Not Significant)

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bomber (MLS25882)							with 1986 Military Remains Act	
The buried remains of a crashed Halifax bomber (PEG206)	Direct	Permanent	Non- designated heritage asset	High Harm	County	Major Harm (Significant)	Additional archaeological works undertaken in accordance with 1986 Military Remains Act	Moderate Harm (Not Significant)
The buried remains of a crashed Wellington bomber (PEG207)	Direct	Permanent	Non- designated heritage asset	High Harm	County	Major Harm (Significant)	Additional archaeological works undertaken in accordance with 1986 Military Remains Act	Moderate Harm (Not Significant)

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Ditches, possible enclosure, Belton Grange (MLS18343)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Cropmark enclosure visible on aerial photograph (PEG217)	Direct	Permanent	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Hatfield Chase (PEG223)	Direct	Permanent	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Thorne Moors (PEG224)	Direct	Permanent	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)

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Crowle Common (PEG225)	Direct	Permanent	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Geophysical Anomaly – Linear ditch (PEG226)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Linear ditch (PEG227)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Parallel curvilinear ditches (PEG228)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)

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Geophysical Anomaly – Pond? (PEG229)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Rectilinear enclosure? (PEG230)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Geophysical Anomaly – Peat Railway line (PEG231)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Sub-circular enclosure (PEG232)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)

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Geophysical Anomaly – Small sub-circular enclosure (PEG233)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Geophysical Anomaly – Series of ditches (PEG234)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Series of ditches (PEG235)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Series of	Direct	Permanent	Non-designated	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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ditches (PEG236)			heritage asset					
Geophysical Anomaly – Parallel curvilinear ditches (PEG237)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Geophysical Anomaly – Parallel linear ditches (PEG238)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Geophysical Anomaly – Series of ditches (PEG239)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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Geophysical Anomaly – Linear ditches; trackway? (PEG240)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Linear ditches (PEG241)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Series of drainage ditches (PEG242)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – Curvilinear	Direct	Permanent	Non-designated	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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ditch (PEG243)			heritage asset					
Geophysical Anomaly – Curvilinear ditch (PEG244)	Direct	Permanent	Non- designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – remains of Crow Tree Cottage (PEG246)	Direct	Permanent	Non- designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – linear ditches (PEG247)	Direct	Permanent	Non- designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)

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Geophysical Anomaly – rectilinear enclosure (PEG248)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm (Not Significant)	None	Minor Harm (Not Significant)
Geophysical Anomaly – possible settlement evidence (PEG249)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm (Significant)	Additional archaeological mitigation	Minor Harm (Not Significant)
Isle of Axholme LC14 Policy Area (PEG218)	Direct	Permanent	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Dirtiness Cottage	Indirect	Temporary	Designated asset of less than	Less than substantial harm	England	Less than substantial harm at the lower end	n/a	Less than substantial harm at the lower end

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			the highest significance			of the spectrum (Not Significant)		of the spectrum (Not Significant)
Dirtiness Pumping Station	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum

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						(Not Significant)		(Not Significant)
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Belton Grange	Indirect	Temporary	Non-designated heritage asset	Minor Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)

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Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Operation								
Dirtiness Cottage	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Dirtiness Pumping Station	Indirect	Temporary	Designated asset of less than	Less than substantial harm	England	Less than substantial harm at the lower end	n/a	Less than substantial harm at the lower end

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			the highest significance			of the spectrum (Not Significant)		of the spectrum (Not Significant)
Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum

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						(Not Significant)		(Not Significant)
Belton Grange	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Isle of Axholme LC14 Policy Area (PEG218)	Direct	Temporary	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)

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Decommissioning								
Dirtiness Cottage	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Dirtiness Pumping Station	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)

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Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum (Not Significant)	n/a	Less than substantial harm at the lower end of the spectrum (Not Significant)
Belton Grange	Indirect	Temporary	Non-designated	Minor Adverse	County	Minor Harm	n/a	Minor Harm

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			heritage asset			(Not Significant)		(Not Significant)
Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)
Isle of Axholme LC14 Policy Area (PEG218)	Direct	Temporary	Non-designated heritage asset	Low Harm	County	Minor Harm (Not Significant)	n/a	Minor Harm (Not Significant)

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8.13. Glossary

Term	Definition
aOD	Above Ordnance Datum. Height of a location measured in relation to Ordnance Datum, Newlyn
BGL	Below Ground Level
Designated Landscape	Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans or other documents
LiDAR	Light Detection and Ranging
OS	Ordnance Survey

Term	Definition
Tranquility	A state of calm and quietude associated with peace, considered to contribute to the significance of a heritage asset through its setting.
Zone of Theoretical Visibility (ZTV)	A map, usually digitally produced, shows areas of land within which development is theoretically visible. (GLVIA 3, 2013 p159). Used within Landscape and Visual Assessments (LVIAs) to identify areas of interest for further investigation and assessment. Used in this instance to identify potential sensitive heritage receptors.

