Gate Burton
ENERGY PARK

Gate Burton Energy Park Environmental Statement

Volume 1, Chapter 7: Cultural Heritage
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Gate Burton Energy Park Limited

Prepared for:

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7. Cultural Heritage

7.1 Introduction

7.1.1 This chapter of the Environmental Statement presents the findings of an assessment of the likely significant effects on cultural heritage as a result of the Scheme. For more details about the Scheme, including construction methodology, layout and life span, refer to **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**.

7.1.2 This chapter identifies and proposes measures to address the potential impacts and likely significant effects on cultural heritage, during the construction, operation, and decommissioning phases of the Scheme.

7.1.3 This chapter is supported by the following appendices in **ES Volume 3 [EN010131/APP/3.3]**:

- **Appendix 7-A:** Cultural Heritage Desk-Based Assessment
- **Appendix 7-B:** Gazetteer of Known Heritage Assets
- **Appendix 7-C:** Aerial Photograph and LiDAR Analysis Report
- **Appendix 7-D:** Geophysical Survey Fieldwork Reports
- **Appendix 7-E:** Trial Trench Evaluation Fieldwork Report
- **Appendix 7-F:** Geoarchaeological Assessment Report

7.1.4 This chapter is supported by the following figures in **ES Volume 2 [EN010131/APP/3.2]**:

- **Figure 7-1:** Designated Heritage Assets - Overview
- **Figure 7-2:** Non-designated Heritage Assets - Overview
- **Figure 7-3:** Previous Archaeological Investigations Overview
- **Figure 7-4:** Historic Landscape Character Areas

7.1.5 A glossary and list of abbreviations are defined in the **ES Volume 1, Chapter 0: Contents, Glossary and Abbreviations [EN010131/APP/3.1]**.

7.2 Consultation

7.2.1 Consultation has been undertaken with key stakeholders with specific focus on cultural heritage, including Historic England, the Archaeological Advisors for Lincolnshire County Council (LCC) and the Archaeological Advisors for Nottinghamshire County Council (NCC). The Site is located within the local authority boundaries of West Lindsey District Council (Lincolnshire) and Bassetlaw District Council (Nottinghamshire). The Archaeological Advisors for Lincolnshire County Council act on behalf of West Lindsey District Council and Bassetlaw District Council on all matters related to archaeology in respect of this Application.

7.2.2 Consultation responses in relation to cultural heritage are presented in **ES Volume 3: Appendix 1-C [EN010131/APP/3.3]** which contains a full account of the statutory and non-statutory consultation process and issues raised in feedback. Matters raised regarding the scope, method and mitigation being

considered as part of the cultural heritage assessment were then subject to further discussions directly with stakeholders, during working group meetings.

7.2.3 Table 7-1 below provides a summary of engagement with relevant stakeholders undertaken to inform the assessment, including the date and time of meetings and a summary of discussions.

Table 7-1 Consultation Summary Table

Meeting name and date	Attendees (organisation)	Summary of Discussions
05 November – 03 December 2021 Email	Lincolnshire County Council Historic Environment Team	Initial conversations to discuss the approach to consultation and to identify the Archaeological Advisors from the LCC Historic Environment Team who would be overseeing the project on behalf of LCC and NCC. Written Scheme of Investigation (WSI) for geophysical survey was submitted to the Historic Environment Team for review. Comments were received on the WSI for geophysical survey and incorporated into the final version. The comments received related to the methodology of the geophysical survey to ensure quality control during the on-site survey.
08 December 2021 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to introduce the project team and a summary of the proposed Scheme.
02 February 2022 Phone	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Call to discuss the potential embedded design strategies that could be deployed to avoid impacts to archaeological deposits within the Grid Connection Corridor.
15 February 2022 Teams meeting	Archaeology and Conservation Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to introduce the Scheme in further detail and to discuss the proposed assessment process. Meeting minutes provided in **ES Volume 1, Chapter 4: Consultation [EN010131/APP/3.1].**
17 February 2022 Teams meeting	Conservation Manager at Bassetlaw District Council	Meeting to introduce the Scheme and discuss the proposed assessment process.
01 March 2022 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to provide an update on geophysical survey, methodology for trial trenching and expectations for the mitigation strategy.
07 March 2022 Teams meeting	Historic England	Meeting to discuss heritage assessments for the project including update on the design of the development, progress of evaluation surveys, discussion of the proposed corridor and design / mitigation options, discussion on the historic landscape and key points of information detailed in the scoping response.
10 March – 01 April 2022 Email	Historic England	Emails agreeing a preliminary list of viewpoint and photomontage locations pending further research and any additional locations desired as a result.

Meeting name and date	Attendees (organisation)	Summary of Discussions
09 June 2022 Teams meeting	PINS	Meeting to discuss the archaeological evaluation required for the solar schemes in the area. Meeting minutes provided in **ES Volume 1, Chapter 4: Consultation [EN010131/APP/3.1].**
21 June 2022 Email	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Scope of Works for trial trench evaluation submitted to LCC via email detailing the approach to evaluation trenching within the Solar and Energy Storage Park. Email received confirming agreement on the layout of the proposed trial trenching within the Solar and Energy Storage Park. Guidance on the requirements of the WSI for trial trench evaluation also received.
05 August 2022 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to discuss the results of the geophysical survey and present methodology for trial trench evaluation within Grid Connection Corridor. Provide update on the trial trenching within the Solar and Energy Storage Park and organise site monitoring visit. Follow up email received confirming acceptance of WSI.
09 August 2022 Email	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Email received confirming agreement of the layout of the trial trenching within Grid Connection Corridor.
19 October 2022 Email	Historic England and Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Email sent to LCC and Historic England containing the draft Cultural Heritage Desk-based Assessment and associated appendices including the Gazetteer of Known Heritage Assets, the Aerial Photo and LiDAR Analysis Report and the Geophysical Survey reports.
21 October 2022 Site meeting	Historic England and Conservation Advisors for Lincolnshire County Council	Site visit following responses to the PEIR to view and discuss the settings of Heynings Priory and Gate Burton Hall and to view the site's position in the wider landscape more generally in relation to the setting of other heritage assets in the vicinity. Discussion of embedded mitigation options.
27 October 2022 Email	Historic England	Email sent to Historic England containing the draft Cultural Heritage ES Chapter.
12 December 2022 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to discuss the results of the trial trench evaluation and to identify preliminary mitigation responses where required
15 December 2022 Teams meeting	Historic England	Discussion of impacts to the setting of Heynings Priory and Gate Burton Hall and park following the site meeting on 21st October and following the review of draft

Meeting name and date	Attendees (organisation)	Summary of Discussions
		versions of the Cultural Heritage Desk Based Assessment and ES Chapter. Discussion of embedded mitigation options and areas of concern.
21 December 2022 Email	Historic England	An advisory email received from Historic England outlining their position following the meeting on 15th December stating that the embedded mitigation at Heynings Priory is deemed appropriate, but that more work should be done to provide embedded design mitigation at Gate Burton Hall and non-designated park. This recommendation has been acted upon and the submitted scheme design has been amended to reflect Historic England's advice in relation to providing sufficient mitigation at Gate Burton Hall and park.
03 January 2023 Email	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Email sent to LCC containing the draft fieldwork report for the trial trench evaluation.
05 January 2023 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to discuss the results of the fieldwork report for the trial trench evaluation and the proposed final mitigation strategies for the Solar and Energy Storage Park.
12 January 2023 Teams meeting	Archaeological Advisors for Lincolnshire County Council and Nottinghamshire County Council	Meeting to discuss the proposed mitigation strategies for the Grid Connection Corridor.

7.3 Legislation and Planning Policy

7.3.1 This section includes a list of the relevant legislation and planning policies to cultural heritage. Further information is provided in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**. The applicable legislation and planning policy includes:

Legislation

- Infrastructure Planning (Environmental Impact Assessment) Regulations (2017) (Ref 7-1);
- Infrastructure Planning (Decisions) Regulations 2010 (Ref 7-2);
- Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 7-3);
- Ancient Monuments and Archaeological Areas Act 1979 (Ref 7-4); and
- The Hedgerow Regulations 1997 (Ref 7-5).

National Planning Policy

- Overarching National Policy Statement (NPS) for Energy EN-1 (Ref 7-6) with particular reference to Section 5.8 in relation to the significance, impact and recording of the historic environment;
- National Policy Statement for Electricity Networks Infrastructure EN-5 (Ref 7-7) with particular reference to paragraph 2.11.14 in relation to the archaeological consequences of electricity line installation and considering undergrounding;
- National Planning Policy Framework (NPPF) (Ref 7-12) with particular reference to Section 16: Conserving and Enhancing the Historic Environment;
- Draft Overarching National Policy Statement for Energy (EN-1) (Draft NPS EN-1) (Ref 7-9) in relation to section 5.9, Historic Environment;
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (Draft NPS EN-3) (Ref 7-10) in relation to Section 2.53 solar photovoltaic generation impacts: cultural heritage; and
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (Draft NPS EN-5) (Ref 7-10) in relation to Section 2.11.14.

National Guidance

- Planning Practice Guidance, Conserving and enhancing the historic environment (Ref 7-13);
- Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England (Ref 7-14);
- Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017) (Ref 7-15);
- Historic Environment Statement of Heritage Significance: Analysing Significance in Heritage Assets Historic England Advice Note 12. Historic England (2019) (Ref 7-16);
- Historic England Advice Note 15 Commercial Renewable Energy Development and the Historic Environment (Ref 7-17)

- Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment (2020) (Ref 7-18);
- CIfA Code of Conduct (Ref 7-19); and
- Institute of Environmental Management and Assessment (IEMA), the Institute of Historic Building Conservation (IHBC) and the Chartered Institute for Archaeologists (CIfA), Principles of Cultural Heritage Impact Assessment in the UK (Ref 7-20).

Local Planning Policy

- Central Lincolnshire Local Plan 2012-2036 (Ref 7-21), with particular reference to Policy LP25 which provides the strategy for the historic environment;
- Central Lincolnshire Draft Local Plan 2021 (Ref 7-22), with particular reference to Policy S56 which provides the strategy to protect and conserve the historic environment of Central Lincolnshire;
- Bassetlaw Core Strategy & Development Management Policies DPD (2011) (Ref 7-23), with particular reference to Policy DM8 The Historic Environment;
- Tresswell and Cottam Neighbourhood Plan (2019) (Ref 7-24), with particular reference to Policy 6 which deals with design principles for the area; and
- Rampton and Woodbeck Neighbourhood Plan (2021) (Ref 7-25), with particular reference to Policies 5 and 6 which deal with design principal and heritage assets.

7.4 Assessment Assumptions and Limitations

7.4.1 The baseline is drawn from the cultural heritage desk-based assessment produced for the Scheme (**ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). It is assumed that data therein provided by third parties is accurate at the time of reporting.

7.4.2 The assessment has been undertaken adopting the principles of the 'Rochdale Envelope'. This involves assessing the maximum (and where relevant, minimum) parameters for the Scheme considered to be the likely worst-case scenario to determine significance of effect. The Design Parameters assessed are set out in Table 2-1 of **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**. An Indicative Site Layout Plan that conforms to the Design Parameters is provided in **ES Volume 2: Figure 2-4 [EN010131/APP/3.2]**.

7.4.3 The Design Parameters have been assessed for below ground archaeological remains, based on the maximum areas that will be disturbed. It is assumed that the majority of the Solar and Energy Storage Park, with the exception of areas where no works are proposed, would be subject to below ground disturbance including poles driven or screwed into the ground for the installation of the Solar PV Panels, foundations for installation of the BESS compound and trenches for cabling to connect the BESS station to the Power Conversion Units and Solar PV Arrays, as well as temporary construction compounds and access tracks. Within the Grid Connection Corridor, **ES Volume 2: Figure 2-5 [EN010131/APP/3.2]** locates avoidance areas where

areas have been identified for Horizontal Directional Drilling (HDD) that will be designed to reach depths below the buried archaeological remains. Within these avoidance areas temporary access tracks may be required, except in those areas shown in **ES Volume 2: Figure 2-4 [EN010131/APP/3.2]**. All other areas within the Grid Connection Corridor would be potentially subject to below ground disturbance including open trench excavation for cabling, entry and exit pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. Where relevant these assumptions are also outlined in the assessment of likely impacts and effects in Section 7.10 in relation to specific heritage assets.

7.4.4 A Drainage Strategy has been developed and is provided within **ES Volume 3: Appendix 9-C [EN010131/APP/3.3]**. The strategy describes measures to manage drainage from new infrastructure and manage any required changes to existing land drainage requirements. As such, there is anticipated to be no additional impact on below ground archaeological remains as a result of change to drainage.

7.4.5 Assessment of impacts on the settings of heritage assets has been based on the Indicative Site Layout Plan (**ES Volume 2: Figure 2-4 [EN010131/APP/3.2]**) in order to provide a realistic visual impression of the Scheme. The setting assessment assumes that all structures would be at the maximum heights allowed by the Design Parameters. Because the location of transformers, inverters and switchgears is not fixed, the assessment assumes that the transformers will be pre-assembled with central inverters and switchgear to form a single contained unit, and that they will be placed at the field edges nearest heritage assets, or otherwise in the worst-case location within a field, as judged by professional experience and the sensitivity of an asset's setting. Likewise, the assessment uses professional experience to judge the worst-case, least sympathetic, colour for the enclosed unit, either grey or green, based on the setting of an asset. Where relevant these assumptions are also outlined in the assessment of likely impacts and effects in Section 7.10 in relation to specific assets.

7.4.6 Space for offsets from designated and non-designated built heritage assets and land within the Order limits required for embedded mitigation are secured by Work No. 5 (Schedule 1 of the draft DCO) and the corresponding areas for Work No. 5 as shown on the **Works Plan [EN010118/APP/2.2]**, which are areas within the Order limits for heritage, landscape and biodiversity measures. These are described in the **Outline Design Principles [EN010131/APP/2.3]**.

7.4.7 The following general assumptions have been used to assess impacts to heritage assets:

- Solar PV Panels will be mounted on PV Tables secured using poles driven or screwed into the ground at a maximum depth of 2m.
- The maximum height of the PV Tables will be 3.5m above ground level.
- The Power Conversion Unit will form a single contained unit with maximum dimensions of 40 square metres (footprint), up to 8m in length, up to 5m in width and up to 3.5m above ground level and will be mounted on concrete foundations.

- Low Voltage Distribution Cables will be installed within cable trenches with maximum dimensions of up to 1.2m width and up to 1.2m depth.
- The BESS Compound will be installed on a concrete base that requires foundations up to a maximum depth of 1m.
- BESS Containers will be up to a maximum height of 4.5m above ground level.
- The on-site substation will contain a number of buildings up to a maximum height of 11m above ground level.
- Security fencing will be installed around the operational areas of the Solar and Energy Storage Park and will be up to a maximum height of 3m above ground level.
- In addition to the main compound and three secondary compounds located within the Solar and Energy Storage Park, a number of smaller short-term use construction compounds will be located across the Site.
- The construction and operation access road from the A156 to the BESS is assessed as an asphalt road with a maximum width of 8m It is assumed that hedgerows will be removed for 220m north and 220m south of its junction with the A156 for the construction phase, and that these will be replanted for the operational phase. Within the Site the route from the construction compound to the BESS will maintain a 5m offset from existing hedgerows.
- Vegetation removal will be required in certain locations to facilitate construction of access points and visibility splays during construction; however, a commitment to either cutting down to base or where necessary replanting is made in the **Outline Landscape and Ecological Management Plan (OLEMP) [EN010131/APP/7.10]**.
- The Grid Connection Corridor will require a maximum 25m wide construction corridor and it is assumed that this will be located anywhere within the DCO limits of the Grid Connection Corridor.
- A temporary access track will be constructed within the Grid Connection Corridor and it is assumed that this will be located anywhere within the DCO Limits of the Grid Connection Corridor.
- The Grid Connection will require open cut trenching up to a maximum width of 1.1m and a maximum depth of 1.6m.
- There will be up to 40 HDD entry and exit pits with each measuring up to 25m x 20m.
- The preparation of construction laydown areas, temporary construction compounds, concrete foundations for structures, and installation of new and upgrading of existing access tracks may require levelling of the existing ground surface to provide an even surface.

7.4.8 Archaeological evaluations in the form of geophysical survey and trial trench evaluation (**ES Volume 3: Appendix 7-D and 7-E [EN010131/APP/3.3]**) have been undertaken within the Site and the results have been incorporated into this assessment. Livestock were present in Fields 115 – 116, tree saplings were newly planted in Field 130, and access was not granted to Fields 147 and 149 at the time of the survey, therefore trial trench evaluation was not undertaken in these fields. This is not considered a limitation to the assessment; the impacts and additional mitigation requirements in these areas can be adequately understood based on the DBA (**ES Volume 3:**

Appendix 7-A [EN010131/APP/3.3]) and the evaluation surveys undertaken for the Scheme (**ES Volume 3: Appendix 7-C - F [EN010131/APP/3.3]**).

7.5 Study Area

7.5.1 The following study areas were defined to include all designated and non-designated heritage assets with the potential to be affected by the Scheme, and to provide information on the archaeological potential of the Site. This will ensure that the assessment is proportionate, in accordance with the requirements of the NPS EN-1 paragraph 5.8.8 (Ref 7-6) and NPS EN-3 paragraph 2.5.33 (Ref 7-7) and in line with the NPPF paragraph 194 (Ref 7-12), draft NPS-EN1 paragraphs 5.9.10-5.9.11 (Ref 7-9), and draft NPS EN-3 paragraphs 2.53.3 and 2.53.5 (Ref 7-10).

7.5.2 The study areas set out below were proposed in the Scoping report and agreed through the Scoping Opinion received (see **ES Volume 1, Chapter 4: Consultation [EN010131/APP/3.1]**).

7.5.3 The purpose of the study areas is to ensure comprehensive data capture, encompassing all heritage assets, both designated and non-designated, including archaeological sites, historic buildings, conservation areas and registered parks and gardens, together with the relevant historic landscape characterisation. All of the captured data is reviewed in **ES Volume 3 Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**, and those assets potentially affected by the Scheme have been taken forward for assessment in this ES chapter.

Designated Heritage Assets

3km study area

7.5.4 A study area of 3km from the Solar and Energy Storage Park boundary has been defined to provide historical and archaeological context and to identify designated heritage assets with the potential to be affected by the Scheme (see **ES Volume 2: Figure 7-1 [EN010131/APP/3.2]**). The 3km study area also includes the Grid Connection Corridor where it falls within the study area.

500m study area

7.5.5 Where the Grid Connection Corridor is located beyond the 3km study area, a 500m study area has been applied (see **ES Volume 2; Figure 7-1 [EN010131/APP/3.2]**). This 500m study area is considered appropriate as the works within the Grid Connection Corridor comprise underground cabling (further information on the Grid Connection Corridor is provided in **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**).

Wider 5km study area

7.5.6 The settings of designated heritage assets of the highest significance (scheduled monuments; Grade I and Grade II* listed buildings; and Registered Parks and Gardens) outside of these defined study areas have also been considered, up to 5km from the Solar and Energy Storage Park boundary. This was guided by the Scheme's Zone of Theoretical Visibility (ZTV) (see **ES Volume 2: Figure 10-10 [EN010131/APP/3.2]**), but also considered physical

and historical connectivity and relationships with other assets and the wider landscape.

Non-designated Heritage Assets

1km study area

7.5.7 The study area for the collation of information on non-designated heritage assets has been defined as a 1km radius from the boundary of the Solar and Energy Storage Park (**ES Volume 2: Figure 7-2 [EN010131/APP/3.2]**), which has been judged as appropriate to identify known archaeological assets and assess the potential for the survival of archaeological remains within the Solar and Energy Storage Park given the Scheme's nature, size and location. The 1km study area also includes the Grid Connection Corridor where it falls within the study area.

500m study area

7.5.8 Where the Grid Connection Corridor is located beyond the 1km study area, a 500m study area has been applied (**ES Volume 2: Figure 7-2 [EN010131/APP/3.2]**). This 500m study area is considered appropriate as the works within the corridor comprise underground cabling (further information on the Grid Connection Corridor is provided in **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**).

7.6 Assessment Methodology

Sources of Information

7.6.1 Sources of information that have been consulted include:

- National Heritage List for England (NHLE) (Ref 7-26);
- Lincolnshire Historic Environment Record (HER) and Historic Landscape Characterisation (HLC);
- Nottinghamshire HER and HLC;
- Various online resources including the British Geological Survey (BGS) Geology of Britain Viewer (Ref 7-26), and the local planning portal for the Local Plan, Neighbourhood Plans and other planning information;
- Documentary, cartographic and other resources as deposited within the Lincolnshire Archives and the Local Studies Library;
- Published and unpublished literature (including a detailed review of reports for previous fieldwork carried out within the proximity to the Site boundary);
- Envirocheck Report for historic Ordnance Survey mapping (see **ES Volume 3: Appendix 15-E – Annex B [EN010131/APP/3.3]);**
- Results of the Aerial Photograph and LiDAR Analysis (see **ES Volume 3: Appendix 7-C [EN010131/APP/3.3]**);
- Results of the Geophysical Survey (see **ES Volume 3: Appendix 7-D [EN010131/APP/3.3]**);
- Results of the Trial Trench Evaluation (see **ES Volume 3: Appendix 7-E [EN010131/APP/3.3]**); and
- Results of the Geoarchaeological Assessment (see **ES Volume 3: Appendix 7-F [EN010131/APP/3.3]**.

7.6.2 A site walkover survey was undertaken on 11 and 12 January and 2 March 2022 to record the survival, extent, condition, setting and significance of heritage assets within the Site and to identify potentially affected assets including listed buildings, conservation areas and registered parks and gardens within the study areas. The setting of these heritage assets was also identified, and potential Scheme impacts were considered.

7.6.3 The heritage assets discussed within this assessment, including designated and non-designated heritage assets, are identified by their unique identification numbers, as assigned by the NHLE for designated assets and by the HER for non-designated heritage assets. The HER numbers are prefixed *MLI* for Lincolnshire and *MNT* for Nottinghamshire. Where new assets have been identified as a result of the work undertaken to inform the cultural heritage baseline these have been provided with a unique identification number prefixed with *AEC* and numbered sequentially. All assets are identified within the text using their unique identification number and can be cross-referenced to the gazetteers in **ES Volume 3: Appendix 7-B [EN010131/APP/3.3]** and located in **ES Volume 2: Figures 7-1** to **7-2 [EN010131/APP/3.2]**.

7.6.4 Cross-reference has been made to the ZTV (see **ES Volume 2: Figure 10-10 [EN010131/APP/3.2]**) prepared to support the Landscape and Visual Impact Assessment **ES Volume 1, Chapter 10: Landscape and Visual Amenity [EN010131/APP/3.1]**) to highlight any potential intervisibility between the Scheme and heritage assets; however, this assessment also takes into consideration the fact that setting goes beyond visual relationships. A number of photomontages have been prepared as part of the Landscape and Visual Impact Assessment for the ES and these are also useful for in assessing the effects of the Scheme on the setting of heritage assets. They are cross-referred to within this ES Chapter where relevant to the assessment.

7.6.5 Archaeological evaluations were also undertaken to refine and augment the desk-based data, including a geophysical survey (detailed magnetometry) and targeted trial trenching. The scope and specification of each field investigation have been set out in Archaeological Mitigation Strategy, which were submitted for approval to and approved by the Archaeological Advisors for LCC and NCC in December 2021 (detailed magnetometry) and August 2022 (trial trenching). The first phase of this, comprising geophysical (magnetometer) survey, was undertaken as agreed with the Archaeological Advisors for Lincolnshire and Nottinghamshire in February - October 2022 while the trial trenching survey was carried out in July - October 2022. The results of these surveys (**ES Volume 3, Appendix 7-D: Geophysical Survey** and **Appendix 7-E: Trial Trench Evaluation [EN010131/APP/3.3]**) have been incorporated into the desk-based assessment (**ES Volume 3 Appendix 7-A: Cultural Heritage Desk-based Assessment [EN010131/APP/3.3]**) and the assessment of impact in this ES Chapter.

Impact Assessment Methodology

7.6.6 This section sets out the approach to the assessment of the potential impacts of the Scheme on designated and non-designated heritage assets. The objective of this assessment is to identify any effects upon heritage assets that

are likely to arise from construction, operation and maintenance, and decommissioning of the Scheme.

Assessment of Value (Heritage Significance)

7.6.7 For the purpose of this assessment, the significance of a heritage asset, as defined by Annex 2 of the NPPF, is referred to as its 'value'.

7.6.8 The value of a heritage asset (its heritage significance) is guided by its designated status, and is derived also from its heritage interest, which may be archaeological, architectural, artistic or historic as defined in the NPPF Annex 2, Glossary (Ref 7-12). The setting of a heritage asset can also contribute to its value.

7.6.9 Taking these criteria into account, each identified heritage asset can be assigned a value in accordance with the criteria set out in Table 7-2. This table provides guidance, but professional judgement has been applied in all cases regarding the appropriate category for individual heritage assets. When professional judgement and the results of consultation are applied, some assets may not fit into the specified category presented in Table 7-2. Each heritage asset is assessed on an individual basis and regional variations and individual qualities are considered where applicable.

Table 7-2 Criteria for Determining the Value of Heritage Assets

Asset value	Description
High	World Heritage Sites Scheduled Monuments Grade I and II* listed buildings Registered battlefields Grade I and II* registered parks and gardens Conservation areas of demonstrable high value Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable national or international importance. Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth or other critical factor(s).
Medium	Grade II listed buildings Conservation areas Grade II registered parks and gardens Conservation areas Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable regional importance. Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth or other critical factor(s). Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible.
Low	Locally listed buildings Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable local importance. Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade.

Asset value	Description
	Historic landscape character areas whose value is limited by poor preservation and/ or poor survival of contextual associations.
Very Low (Not significant)	Assets identified on national or regional databases, but which have no archaeological, architectural, artistic or historic value. Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade. Landscape with no or little significant historical merit.

Magnitude of Impact

7.6.10 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to an asset arising from the Scheme. Potential impacts are defined as a change resulting from the Scheme which affects a heritage asset The impacts of a development upon heritage assets can be positive or negative; direct or indirect; long term or temporary; and/or cumulative. Impacts may arise during construction, operation and decommissioning. Impacts can occur to the physical fabric of the asset or affect its setting. Direct physical impacts are considered permanent and result in the total, or partial, loss of a heritage asset. These impacts are not reversible. Impacts as a result of changes to setting are split between those resulting from construction activities which are short-term, and those considered to last for the duration of the development. These are considered to be long-term but are capable of being reversed upon decommissioning.

7.6.11 The level and degree of impact (impact rating) will be assigned with reference to a four-point scale as set out in Table 7-3. The level of impact considers mitigation measures which have been embedded within the Scheme as part of the design development process (embedded mitigation, see Section 7.9). The level of impact considers mitigation measures which have been embedded within the Scheme as part of the design development process (embedded mitigation, see Section 7.9).

7.6.12 Table 7-3The level of impact considers mitigation measures which have been embedded within the Scheme as part of the design development process (embedded mitigation, see Section 7.9).

Table 7-3 Criteria for Determining the Magnitude of Impact on Heritage Assets

Magnitude of Impact	Description of impact
High	Changes such that the value of the asset is totally altered or destroyed. Comprehensive change to, or total loss of, elements of setting that would result in harm to the asset and our ability to understand and appreciate its value.
Medium	Change such that the value of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the value of the asset.

Magnitude of Impact	Description of impact
Low	Changes such that the value of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the value of the asset.
Very Low	Changes to the asset that hardly affect value. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the value of the asset

Significance of Effect

7.6.13 An assessment to classify the effect, having taken into consideration any embedded mitigation, is determined using the matrix at

7.6.14 Table 7-4, which takes account of the value of the asset (Table 7-2) and the magnitude of impact (Table 7-3). Effects can be neutral, adverse or beneficial.

Table 7-4 Significance of Effect

Importance of Receptor	Magnitude of Impact				
	High	Medium	Low	Very Low	No change
High	Major	Major	Moderate	Minor	Neutral
Medium	Major	Moderate	Minor	Negligible	Neutral
Low	Moderate	Minor	Negligible	Negligible	Neutral
Very Low	Minor	Negligible	Negligible	Negligible	Neutral

7.6.15 This chapter considers that major or moderate effects are significant for the purposes of the EIA Regulations, in accordance with standard EIA practice. Once the effect has been identified, additional mitigation can be used to offset, reduce or compensate for any significant adverse effects. Reassessing the significance of the effect after applying any additional mitigation allows the level of residual effect to be assessed.

7.6.16 Within the NPPF, impacts affecting the value of heritage assets are considered in terms of harm. There is a requirement to determine whether the level of harm amounts to ‘substantial harm’ or ‘less than substantial harm’. There is no direct correlation between the significance of effects identified in this EIA chapter and the level of harm caused to heritage significance. The assessment of harm arising from the impact of the Scheme has been determined using professional judgement and is provided within the **Planning Statement [EN010131/APP/2.2]**.

7.7 Baseline Conditions

7.7.1 This section describes the baseline environmental characteristics for the Scheme and surrounding areas with specific reference to cultural heritage.

7.7.2 The Scheme occupies an area which has largely not been subject to previous archaeological study. A desk-based assessment detailing the heritage baseline, including the historical background for the Site and a statement of significance for each heritage asset with the potential to be impacted by the

Scheme is provided in **ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**. Designated and non-designated heritage assets are shown on **ES Volume 2: Figure 7-1** and **Figure 7-2 [EN010131/APP/3.2]**.

Existing Baseline

7.7.3 There are no World Heritage Sites, Registered Park and Gardens, Registered Battlefields, or Protected Wrecks located within the Site or study areas.

7.7.4 There are no designated heritage assets located within the Site.

Scheduled Monuments

7.7.5 There are no scheduled monuments located within the Site.

7.7.6 There are six scheduled monuments located within the 3km study area for the Solar and Energy Storage Park comprising:

- *Segelocum* Roman town (1003669);
- Roman fort south of Littleborough Lane (1004935);
- Medieval Bishops palace, Stow Park (1019229);
- Hermit Dam moated site (1016110);
- Site of Heynings Priory (1008685); and
- Site of college and Benedictine Abbey, St Mary's Church, Stow (1012976).

7.7.7 There is one scheduled monument located within the 500m study area for the Grid Connection Corridor comprising:

- Fleet Plantation moated site (1008594).

7.7.8 There are nine scheduled monuments located within the wider 5km study area, comprising:

- Dog Island moat near Gainsborough medieval moated site (1002949);
- Site of Torksey medieval town (1004991);
- Torksey Castle (1005056), also a Grade I listed building (1064079);
- Moated manorial complex immediately north west of Elm Tree Farm (1016920);
- Thorpe medieval settlement (1016978);
- Coates medieval settlement and moated site (1016979);
- Medieval settlement and open field system immediately south east of Low Farm (1017741);
- Cross in All Saints churchyard (1018290); and
- Dovecote at Elm Tree Farm (1020196).

Conservation Areas

7.7.9 There are no conservation areas located within the Site, the 3km study area for the Solar and Energy Storage Park, or the 500m study area for the Grid Connection Corridor.

7.7.10 There are four conservation areas located within the wider 5km study area, comprising:

- Gainsborough Town;

- Gainsborough Riverside;
- Springthorpe; and
- Gainsborough Britannia Works.

Listed Buildings

7.7.11 There are no listed buildings located within the Site.

7.7.12 There are 65 listed buildings located within the 3km study area for the Solar and Energy Storage Park. These comprise four Grade I listed buildings, four Grade II* listed buildings and 57 Grade II listed buildings. The listed buildings are found in clusters within the study area either within the area's settlements, or comprising and within elite estate landscapes, such as at Gate Burton Hall and Knaith Hall. A small number of isolated listed buildings are located outside these foci, generally comprising farms.

7.7.13 The Grade I and Grade II* listed buildings comprise:

- Grade I Church of St Helen (1146567);
- Grade I Church of St Mary, Stow (1146624);
- Grade I Church of St Nicholas (1216860);
- Grade I Church of t Margaret of Antioch (1359484);
- Grade II* Church of St Mary, Knaith (1065040);
- Grade II* Burton Chateau (1064085);
- Grade II* Church of All Saints (1146810); and
- Grade II* Gate Burton Hall (1359458).

7.7.14 In addition, there are two Grade II Listed buildings located within the 500m study area for the Grid Connection Corridor, comprising:

- Grade II Church of Holy Trinity (1212380); and
- Grade II font located to the east of the south porch, within the churchyard of the Church of Holy Trinity (1370089).

7.7.15 There are three Grade I and three Grade II* listed buildings located within the wider 5km study area, comprising:

- Grade I Church of All Saints (1064048);
- Grade I Church of St Edith (1146742);
- Grade I Church of St Martin (1234265);
- Grade II* Church of St Peter (1064078);
- Grade II* Church of St Peter and St Paul (1275773); and
- Grade II* Torksey Viaduct over River Trent (1359456).

Non-designated Assets

7.7.16 There are a total of 31 non-designated heritage assets recorded within the Solar and Energy Storage Park, comprising:

- Findspots of flint of probable Bronze Age date (MLI90353; MLI90354; MLI90355; MLI90356);
- Cropmarks of probable prehistoric date (MLI54017);
- Roman iron working site (MLI97380);
- Findspot of Roman pottery sherds (MLI98301);

- Former medieval settlements at Gate Burton (MLI50512) and Knaith (MLI50529);
- The medieval deer park (MLI50408)
- Agricultural features such as ridge and furrow (MLI54010; MLI54012), and medieval field boundary (MLI54019).
- Two findspots of medieval pottery (MLI98302; MLI98303).
- Three former post-medieval farm buildings (MLI118135; MLI118136; MLI118140),
- Post-medieval parkland at Gate Burton (MLI98360)
- Post-medieval findspot of pottery (MLI98305).
- Modern windpump at Clay Farm (MLI53678).
- Cropmarks of unknown date (MLI54018);
- Cropmarks of undated rectangular enclosure (MLI90939; AEC007);
- Find spot of ceramic building material of unknown date (MLI98304);
- Clay Farm (MLI118141);
- The Great Northern and Great Eastern Joint Railway;
- Linear geophysical anomalies possibly representing a medieval building (AEC008);
- Romano-British settlement site (AEC009);
- Iron Age / Romano-British enclosure (AEC010);
- Romano-British field system (AEC011); and
- Romano-British settlement site (AEC012).

7.7.17 There are a total of 9 non-designated heritage assets recorded within the Grid Connection Corridor, comprising:

- Cropmarks indicating Romano-British activity (MLI52472; AEC013);
- Roman Cropmarks (MLI52489);
- Till Bridge Lane, Roman Road (MLI50575);
- Post-medieval flood defences (MLI52488);
- The Winter Camp of the Viking Great Army at Torksey (MLI125067);
- Undated cropmarks (MLI54108);
- Iron Age / Roman Settlement, Cottam (MNT15983);
- Cropmarks at South Leverton (MNT4983); and
- Romano-British settlement site (AEC014).

7.7.18 There are a total of 130 non-designated heritage assets located within the 1km study area for the Solar and Energy Storage Park, which includes 42 non-designated historic buildings.

7.7.19 There are a total of 57 non-designated heritage located within the 500m study area for the Grid Connection Corridor, which includes five non-designated historic buildings.

Future Baseline

7.7.20 The future baseline scenarios are set out in **ES Volume 1, Chapter 5: EIA Methodology [EN010131/APP/3.1]**.

7.7.21 This section considers those changes to the baseline conditions described above that might occur during the time period over which the Scheme will be

in place. It considers changes that might occur in the absence of the Scheme being constructed.

7.7.22 Changes to buried archaeological assets which might occur during the lifespan of the Scheme in the absence of the Scheme are minimal. They would be limited to typical taphonomic (i.e., erosion, degradation, corrosion, etc.) processes on buried archaeological assemblages. This would be unlikely to significantly alter the current baseline scenario.

7.7.23 It is not considered likely that significant numbers of designated built heritage assets will be added to the baseline in the future. The built heritage baseline is unlikely therefore to undergo significant change.

7.8 Potential Impacts

7.8.1 Mitigation measures being incorporated in the design and construction of the proposed Scheme are set out in Section 7.9 below. Prior to the implementation of the mitigation, the proposed Scheme has the potential to affect cultural heritage (positively or negatively), during construction, operation and decommissioning, in the following ways.

Construction Impacts

7.8.2 Temporary and short-term construction impacts lasting for all or part of the construction phase of the Scheme potentially include the following:

- The presence and movement of construction plant and equipment within the Site and surrounding road network, which may impact on the value of heritage assets through change to their setting; and
- The presence of construction compounds and activities within working areas, including associated construction noise and lighting, which may impact on the value of heritage assets through change to their setting.

7.8.3 Permanent and reversible long term construction impacts lasting beyond the construction phase potentially include the following:

- Physical impacts on below ground archaeological remains arising from construction activities which would result in the partial or total removal of heritage assets;
- Physical impacts on landscapes of historical, cultural or archaeological significance as a consequence of construction, such as the loss of important elements of the landscape as a result of site clearance; and
- Impacts on the setting of heritage assets as a result of the introduction of the physical form and appearance of the Scheme within their setting.

Operation Impacts

7.8.4 Temporary operation impacts lasting for all or part of the operational phase of the Scheme potentially include the following:

- Increase in traffic movements on and around the Site (maintenance traffic), which could affect the value of heritage assets through change to their setting; and

- Impacts through change to the setting of heritage assets in relation to operational lighting and/or noise.

7.8.5 The impact of the introduction of the physical form and appearance of the Scheme at construction will result in a continued effect on the setting of heritage assets through the operational phase.

7.8.6 No potential for permanent operation impacts has been identified in relation to below ground archaeological remains.

Decommissioning Impacts

7.8.7 Decommissioning impacts are likely to be similar to those temporary impacts experienced during construction of the Scheme. Impacts lasting for all or part of the decommissioning phase of the Scheme potentially include the following:

- The presence and movement of plant and equipment within the Site and surrounding road network, which may impact on the value of heritage assets through change to their setting; and
- The siting of compounds and activities within working areas, including associated noise and lighting, which may impact on the value of heritage assets through change to their setting.

7.8.8 It is not anticipated that there will be any permanent impacts during decommissioning as a well-designed decommissioning scheme would not have any impact beyond the already-disturbed footprint of the Scheme and will take into account areas of archaeological deposits that have been preserved *in situ*; therefore, it is not anticipated that decommissioning activities would have a direct physical impact upon below ground archaeological remains

Heritage Assets Scoped in to Assessment

7.8.9 The cultural heritage baseline assessment presented in **ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]** has identified the potential for impacts to designated and non-designated heritage assets within the Site and study area as a result of the Scheme. The following designated and non-designated assets are those where it is considered that there is the potential for impact.

7.8.10 Designated Heritage Assets scoped in to further assessment:

- *Segelocum* Roman town (1003669);
- Roman fort south of Littleborough Lane (1004935);
- Medieval Bishops Palace, Stow Park (1019229);
- Heynings Priory scheduled monument (1008685);
- Site of a college and Benedictine Abbey, St Mary's Church (1012976);
- Fleet Plantation moated site (1008594);
- Gate Burton Hall Grade II* listed building (1359458);
- The Chateau Grade II* listed building in Gate Burton (1064085);
- Gate Burton Hall Cottages Grade II listed building (1166351);
- Walled Garden at Gate Burton Hall Grade II listed building (1472727);
- Church of St Helen Grade II listed building in Gate Burton (1064087);
- Old Rectory Grade II listed building in Gate Burton (1359457); and

- Gateway to Gate Burton Hall Grade II listed building (1064086).
- Church of St Mary Grade II* listed building in Knaith (1064050)
- Knaith Hall Grade II listed building (1359480);
- Church of St Helen Grade II listed building in Willingham by Stow (1146826);
- Willingham House Grade II listed building in Willingham by Stow (1359509);
- Grange Farmhouse Grade II listed building in Willingham by Stow (1308795);
- Church of St Mary Grade I listed building in Stow (1146624); and
- South Park Farmhouse Grade II listed building (1064051).

7.8.11 Non-designated heritage assets scoped in to further assessment:

- Clay Farm (MLI118141);
- Farmhouse at former Siding Farm (MLI841686);
- Homestead Stackyard and Gate Burton School (MLI116422);
- Sandebus Farm (MLI118123);
- Central Park Farm (MLI118137);
- Stephenson's Hill House (MLI118133);
- North Park Farm (MLI118134);
- Cottages south of Gate Burton Park (AEC001);
- House north of Clay Lane (AEC002);
- Kennels (AEC003);
- Farmhouse at Glebe Farm (now called Park Farm) (AEC004);
- Former medieval deer park at Knaith (MLI50408);
- Former medieval settlement at Gate Burton (MLI50512);
- The post-medieval parkland at Gate Burton (MLI98360);
- Medieval agricultural features including ridge and furrow (MLI54010; MLI54012) and field boundary (MLI54019);
- Modern windpump at Clay Farm (MLI53678);
- Cropmarks of unknown date (MLI54018);
- Cropmarks of undated rectangular enclosure (MLI90939; AEC007);
- Linear anomalies possibly representing a medieval building (AEC008);
- Romano-British settlement site (AEC009);
- Iron Age / Romano-British enclosure (AEC010);
- Romano-British field system (AEC011);
- Romano-British settlement site (AEC012);
- Cropmarks indicating Romano-British activity (MLI52472; AEC013);
- Roman cropmarks (MLI52489);
- Post-medieval flood defences (MLI52488);
- The Winter Camp of the Viking Great Army at Torksey (MLI125067);
- Iron Age / Roman settlement, Cottam (MNT15983);
- Cropmarks at South Leverton MNT4983); and
- Romano-British settlement site (AEC014).

7.8.12 The trial trench evaluation undertaken for the Scheme, combined with the results of the geophysical survey, aerial photograph and LiDAR data assessment and the HER record, has identified the archaeological resource within the Site. Based on this, this assessment has identified a low potential

for the Solar and Energy Storage Park and Grid Connection Corridor to contain previously unrecorded archaeological remains dating to all periods, outside of the areas of known archaeological activity as recorded in the HER and identified by the archaeological evaluations undertaken for the Scheme. There may be some limited potential for stray archaeological finds and isolated features to be present within the Solar and Energy Storage Park and Grid Connection Corridor, especially where the DCO Site boundary comes into close proximity to the settlement areas and known areas of archaeological activity. In addition, within the Grid Connection Corridor, there is a high potential for paleoenvironmental deposits to survive, predominantly within the floodplains either side of the River Trent.

7.8.13 The historic landscape character within the Site has been assessed as being of medium and high sensitivity to change. Whilst the majority of the Site is characterised by modern agricultural enclosures formed through 20th century boundary removal, the historic boundaries of the modern field system are considered to have medium sensitivity to change as remnants of the enclosed landscape of the 18th and 19th centuries. Ancient hedgerows and areas of ancient woodland in particular are considered to have high sensitivity to change as remnants of a medieval agricultural landscape and these are present within the Solar and Energy Park at Burton Wood and along the surviving parish boundaries of Gate Burton and Knaith. The short section of Tresswell parish boundary within the Grid Connection Corridor may also be medieval in origin.

7.8.14 A number of designated and non-designated assets were scoped out of further assessment in the baseline study due to the lack of potential for impacts resulting from the Scheme. The rationale for scoping out these assets is provided in **ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**.

7.9 Embedded Mitigation Measures

7.9.1 This section details the design avoidance measures and embedded mitigation that has been incorporated into the Scheme design to avoid and / or reduce potential significant effects to heritage assets.

Construction and Decommissioning

7.9.2 This section contains the avoidance and embedded mitigation measures during construction and decommissioning relevant to this chapter that are already incorporated into the design, as described in **ES Volume 1, Chapter 2: The Scheme** and **Chapter 3: Alternatives and Design Evolution [EN010131/APP/3.1]** and set out in the **Outline Design Principles [EN010131/APP/2.3]**.

7.9.3 The embedded mitigation measures developed have been informed by the relationship between the Scheme and relevant assets and on the findings of the desk-based assessment, including the results of a programme of geophysical survey, trial trenching, and a review of aerial photographs and available LiDAR data and the information provided by detailed visualisation works.

7.9.4 Avoidance measures used in the development of the Scheme relevant to cultural heritage include:

- Designing the Site boundary to exclude all designated heritage assets from the Site in order to avoid physical impacts;
- Retention of all non-designated historic buildings within the Site with no physical impacts to those buildings proposed;
- The siting of the BESS and on-site substation in an area of the Site with reduced visibility limits visual intrusion into the setting of heritage assets;
- The use of a buried cable for the Grid Connection Corridor is proposed in order to remove potential impacts on the setting of heritage assets caused through the introduction of an overground cable; and
- The routing and siting for the Grid Connection Corridor was influenced by the identification of potentially significant below ground archaeological remains along the route corridor, with the route selected to avoid significant archaeological remains as far as practicable.

7.9.5 Where it has not been possible to re-route the Grid Connection Corridor around archaeological remains, the use of HDD, as opposed to open cut trenching, has been proposed in some locations and these are marked as 'Avoidance Areas' in **ES Volume 2: Figure 2-5 [EN010131/APP/3.2].**

7.9.6 Following the results of the archaeological evaluation surveys undertaken for the Scheme, an area of archaeological activity assessed as being of medium value has been identified within Fields 131, 132 and 136 of the Grid Connection Corridor. Embedded mitigation is provided in the form of an 'Avoidance Area' through the use of HDD instead of open cut trenching across these fields. This is set out in the **Outline Design Principles [EN010131/APP/2.3]**.

7.9.7 An additional area of archaeology activity assessed as being of medium value has been identified following the results of the trial trench evaluation, within Field 16 of the Solar and Energy Storage Park. The archaeological remains comprise a Romano-British settlement site. Embedded mitigation is provided in the form of removal of Solar PV Panels from the Scheme design in this field, enabling preservation in-situ of these archaeological remains. During construction and operation, this panel free area will not be used for construction or operation-related activities. The boundary of the defined mitigation area will be fenced off from the Scheme. This is set out in the **Outline Design Principles [EN010131/APP/2.3]**.

7.9.8 An area of archaeological activity assessed as being of high value was identified through analysis of the geophysical survey data, within Field 45 of the Solar and Energy Storage Park. These remains comprise a possible medieval building that has the potential to be associated with the scheduled monument of Heynings Priory and, therefore, potentially of equal high value. Embedded mitigation is provided in the form of removal of Solar PV Panels from the Scheme design in this field enabling preservation in-situ of these archaeological remains. During construction and operation, this panel free area will not be used for construction or operation-related activities except for a route of access that runs north-south along the eastern boundary of the field. The boundary of the field will be fenced off from the Scheme, including along

the access route. This is set out in the **Outline Design Principles [EN010131/APP/2.3]**.

7.9.9 With regard to the setting of heritage assets and historic landscape, the embedded mitigation includes:

- The use of panel free buffer zones within the settings of heritage assets, including a 100m buffer area to the east of the non-designated Gate Burton park and a panel exclusion zone between the park boundary and Burton Wood. During construction this panel free area will not be used for any construction-related activities or laydown areas.
- A buffer area around the non-designated Clay Farm and Siding Farm. During construction these panel-free areas will not be used for any construction-related activities or laydown areas.;
- A buffer area in the vicinity of Heynings Priory scheduled monument, to retain its connection with a probably associated building identified in the geophysical survey in Field 45 and to retain its landscaped setting within a 'bowl' of lower-lying boggy ground. During construction this panel free area will not be used for construction-related activities except for a route of access that runs north-south along the eastern boundary of the field; and
- Appropriate and sensitive screening to minimise the visual intrusion of the Scheme, while avoiding, as far as practicable, obscuring or intruding upon important views and relationships between heritage assets or significantly altering historic design intention.
- Screening is shown on the Indicative Site Layout Plan in **ES Volume 2: Figure 2-4 [EN010131/APP/3.2]**. Mitigation by planting will be undertaken within two work packages, Work No. 5, Landscaping and biodiversity enhancements and Work No. 9, Areas of habitat management and biodiversity enhancement measures. Work No. 5(d) includes new native hedgerows; existing hedgerow enhancement gapping up and infill planting; and new native woodland buffer planting to reinforce existing woodland and tree belts. Any mitigation planting has taken into consideration the historic landscape character as appropriate, and most of the proposed new boundary planting within the Site follows boundaries shown on the relevant Enclosure and tithe maps, and historic OS maps. Planting as mitigation to screen views has been limited to avoid the creation of new impacts; rather, it has been used to enhance existing screening and/ or futureproof against the loss of existing planting, as appropriate.
- The hedgerow that is required to be removed for visibility splays during construction will either be cut down to the base or where necessary replanted for the operational phase. Of particular relevance to cultural heritage this includes the hedgerow to be removed to the north and south of the construction access off the A156, north of Gate Burton non-designated park, and any removals required for the Grid Connection Corridor access on Cottam Road. All new planting undertaken within Work Nos. 5(d) and 9 would be implemented and managed in accordance with the **Outline Landscape Ecology Management Plan (OLEMP) [EN010131/APP/7.10]**.

Operation

7.9.10 Avoidance measures included in the design of the operational scheme in relation to cultural heritage include the use of infrared sensors on task-specific maintenance and operational lighting rather than permanent lighting of the Scheme. This avoids impacts caused through changes to the setting of heritage assets at night.

Monitoring

7.9.11 No archaeological monitoring is required to mitigate any physical effects on cultural heritage.

7.9.12 No monitoring is required in relation to effects arising from changes to the setting of heritage assets.

7.10 Assessment of Likely Impacts and Effects

7.10.1 Taking into account the embedded mitigation measures as detailed in Section 7.9 above, the potential for the Scheme to generate effects was assessed using the methodology as detailed in Section 7.6 of this Chapter.

7.10.2 The effects have been assessed following consideration of the potential impacts outlined in Section 7.8 and the mitigation measures in Section 7.9.

7.10.3 As discussed in Section 7.5, the following provides a proportionate assessment of likely significant effects on cultural heritage. As such, only those assets which are considered likely to be impacted by the Scheme, as informed by the desk-based research and professional judgement, are discussed. Those assets which will not experience an impact, either physically or through changes to their setting, are omitted. Details of assets within the study area, but not impacted by the Scheme are provided in the desk-based assessment **ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**.

7.10.4 Assets with grouped significance, where their significance is enhanced by their association with other assets, or where their significance and setting are shared, are considered together in the following assessment, where possible, although individual impacts and effects are reported.

Construction (assumed to be 2025 to 2027-28)

7.10.5 There are 63 known heritage assets, together with the historic landscape character, that have the potential to be subject to physical impacts or impacts to the value of assets through change to their setting as a result of the construction of the Scheme. These comprise 19 designated assets and 31 non-designated assets as detailed in Section 7.8 of this ES chapter.

7.10.6 Baseline statements of significance (value) and assessment of the setting of heritage assets are provided in detail in the desk-based assessment (**ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**). The following impact assessment draws on these to understand and assess the likely impacts and effects of the Scheme on these assets.

7.10.7 Prior to assessing impacts on individual heritage assets, an overarching statement can be made in relation to the impact of construction-related noise and vibration upon heritage assets. The assessment presented in **ES Volume 1, Chapter 11: Noise and Vibration [EN010131/APP/3.1]** concludes that there will be no significant noise or vibration effects to human noise-sensitive receptors during construction and decommissioning. The identified noise-sensitive receptors are located at, or in proximity to, many of the heritage assets within this assessment (see noise and vibration receptors R1, R2, R4, R6. R9, R10, R11, R12, R13, R16, R17, R18, R19, R20, R21). The setting of these heritage assets has been considered and the only asset considered to be particularly sensitive to noise intrusion is the Grade II listed Church of St Helen (1064087) in Gate Burton Park due to tranquillity forming part of its illustrative historic interest as a place of worship. The predicted noise levels reported in **ES Volume 1, Chapter 11: Noise and Vibration [EN010131/APP/3.1]** have been reviewed and no impacts are predicted in relation to the setting of heritage assets through construction-related noise intrusion, including at the Grade II listed Church of St Helen in Gate Burton Park.

Designated Heritage Assets

7.10.8 All designated heritage assets are located outside of the Site, therefore there would be no physical impacts to any designated heritage assets. The following assessment considers changes to the setting of designated heritage assets only.

Segelocum Roman town (1003669)

7.10.9 Segelocum Roman town (1003669) is a scheduled monument, of high value, located approximately 1km west of the Solar and Energy Storage Site. Within the scheduled area, there is a cross roads meeting of four roads, defined by a ditch either side. Within the quadrants created by the cross roads, there are rectilinear subdivisions. Parts of 1st century timber buildings have been found during excavations within the scheduled area, as well as two kilns and a small domed oven, along with building debris, coins and pottery dating to the late 1st to later 4th centuries AD. Aerial photography undertaken in 2005 showed the site clearly as ditched cropmarks with a parch mark showing the course of a Roman Road south of the settlement. Additional ditches and enclosures are visible, along with numerous pits of varying sizes. Geophysical survey carried out in 2016 within and around the scheduled monument identified a number of features of the Roman town including the rectilinear subdivisions and roads. The survey also confirmed that there was significant levels of settlement activity beyond the previously understood limits of the settlement, and therefore beyond the area of the scheduled monument. The asset derives its value from its archaeological interest.

7.10.10 The setting of the Roman town is defined by its location on the Roman road, adjacent to the River Trent which would have provided important transport links to the town. Other Roman assets located within close proximity to the town, including a Roman fort, and multiple Roman rural settlements located along the Roman road, also form part of the setting of the town as they contribute to the understanding of the position and context of the Roman town and its location within a wider landscape of Roman settlement activity. The

Site is located within the wider rural landscape around the town, adjacent to the Roman road and the River Trent which forms part of the setting of the asset. The assets value is derived from its archaeological interest and its setting contributes to the understanding of its heritage interest.

7.10.11 The Site, being wholly rural agricultural land, forms part of the wider setting of the Roman town; however, the Site makes little contribution to the understanding of its heritage interest. The Roman town is located on low-lying land to the west of the River Trent, on an elevation of approximately 5m above Ordnance Datum (aOD). Ground level rises quite sharply heading east towards the parkland at Gate Burton which is located on a ridge of higher land on an elevation of approximately 25-30m aOD, which restricts views from the Roman town towards the Solar and Energy Storage Park. In addition, a stretch of woodland located north-east of the Roman town, along the western bank of the River Trent, on an elevation of approximately 20m aOD, restricts views towards the Solar and Energy Storage Park in this direction. Beyond the parkland at Gate Burton, the ground level gradually lowers across the Solar and Energy Storage Park towards the east which further reduces intervisibility between the Roman town and the Solar and Energy Storage Park. The rural landscape in the immediate setting of the asset would remain unchanged and combined with the lack of intervisibility between the asset and the Site, there would be no real change in the ability to understand and appreciate the heritage interest of the asset.

7.10.12 The magnitude of impact through change to the setting of the Scheduled Monument is assessed as **very low** for the lifespan of the Scheme, and on an asset of **high value**, this would result in a **minor adverse** significance of effect for the lifespan of the Scheme. This is considered to be **not significant**.

Roman fort south of Littleborough Lane (1004935)

7.10.13 The Roman Fort, south of Littleborough Lane (1004935) is a scheduled monument, of high value, located approximately 700m south-west of the Solar and Energy Storage Site. The monument consists of archaeological deposits of a first century fortification, visible as cropmarks which have been recorded to the south of Till Bridge Lane with a ditched enclosure recorded marking the boundary of the fort. The fort consists of a sub-rectangular plan enclosure with rounded corners, defined by two parallel ditches between 2m and 3.5m across, with a visible break in both the internal and external ditches on its eastern side, likely indicating a gateway. The asset derives its value from its archaeological interest.

7.10.14 The setting of the fort is defined by its positioning on the higher ground with open views of the hinterland along the Roman road towards the Roman town. It also has a functional setting as it was likely built to defend the river crossing at Segelocum Roman town to the west as well as the surrounding hinterland. The forts setting and its close association with other features of Roman date in the wider landscape, particularly the Roman road, contributes to the understanding of its heritage interest.

7.10.15 The Site, being wholly rural agricultural land, forms part of the setting of the Roman fort; however, the Site makes little contribution to the understanding of its heritage interest. The Roman fort is located to the south of the Roman road,

on an elevation of approximately 12m aOD. The parkland at Gate Burton is located towards the north-east of the Roman fort, on a ridge of higher land on an elevation of approximately 25-30m aOD, which restricts views from the Roman fort towards the Solar and Energy Storage Park in this direction. In addition, field boundaries and tree lines to the north-east of the Roman fort, as well as the modern settlement at Marton to the east of the fort restricts views towards the Solar and Energy Storage Park in these directions. Beyond the parkland at Gate Burton, the ground level gradually lowers across the Solar and Energy Storage Park towards the east which further reduces intervisibility between the Roman fort and the Solar and Energy Storage Park. The rural landscape in the immediate setting of the asset would remain unchanged and, combined with the lack of intervisibility between the asset and the Site, there would be no real change in the ability to understand and appreciate the heritage interests of the asset.

7.10.16 The magnitude of impact through change to the setting of the Scheduled Monument is assessed as **very low** for the lifespan of the Scheme, and on an asset of **high value**, this would result in a **minor adverse** significance of effect which is considered to be **not significant**.

Medieval Bishops Palace, Stow Park (1019229)

7.10.17 The medieval bishop's palace and deer park, Stow Park (1019229) is a scheduled monument of high value. The value of the asset is derived from its archaeological and historic interest, comprising the buried and earthworks remains of the medieval palace of the Bishops of Lincoln, located approximately 2km south of the Solar and Energy Storage Park. The palace is first referenced in the 12th century and likely originated in the 11th century when the Church of St Mary was established in Stow. The palace was situated on a moated site, parts of which survive as ponds. The medieval deer park associated with the palace extended southwards from the palace, and formerly covered an area of approximately 275ha. The only surviving remains of the park consists of earthwork banks of its former boundaries.

7.10.18 The setting of the bishop's palace and deer park was defined by its location within the deer park, which has largely been lost with the only surviving remains comprising earthwork banks of its boundaries. Towards the north of the palace, the landscape would have likely comprised rural agricultural land, which is still largely preserved. Other ecclesiastical buildings and medieval settlements in the wider landscape also form part of the setting of the asset, in particular its relationship with the remains at the Minster Church of St Mary in Stow. These contribute to the understanding of the bishop's palace and deer park's position in the landscape. The assets value is derived from its archaeological and historic interest and its setting contributes to the understanding of its heritage interests.

7.10.19 The Site is located within the wider rural landscape that forms part of the setting of the asset; however, the Site makes little contribution to the understanding of its heritage interests. There are a number of hedgerows and parcels of woodland located to the north of the asset which restricts views towards the Site in this direction. The rural landscape in the immediate setting of the asset would remain unchanged and combined with the lack of

intervisibility between the asset and the Site, there would be no real change in the ability to understand and appreciate the heritage interests of the asset.

7.10.20 The magnitude of impact through change to the setting of the Scheduled Monument is assessed as being **very low** for the lifespan of the Scheme, and on an asset of **high value**, this would result in a **minor adverse** significance of effect which is considered to be **not significant**.

Heynings Priory scheduled monument (1008685) and non-designated extents (ML1520244) and probable medieval building identified through geophysical survey (AEC008)

7.10.21 Heynings Priory (1008685) is a scheduled monument of high value. Its value is derived from its archaeological and historic interest as the buried and earthwork remains of a Cistercian nunnery founded after 1135 and its associative historic interest with the people and places associated with the nunnery, both whilst it was in operation and after it was dissolved. Further earthwork remains extending outside the scheduled area are recorded in the Nottinghamshire HER (MLI150244) and the geophysical survey undertaken in Field 45 identified a building probably of medieval date (AEC008) that is assumed to be associated with the priory site. These additional earthwork and buried remains form part of the same monument and are considered for the purposes of this assessment to be of equivalent high value to the scheduled monument.

7.10.22 Views in the vicinity of the asset are represented by Viewpoints and Photomontages 3a-3c of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figure 10-20 [EN010131/APP/3.2].** The setting assessment noted the siting of the asset on a low rise within a 'bowl' of lower lying boggy ground, its association with nearby areas of recorded medieval agricultural remains (MLI54016 and MLI54022), the surrounding farmed landscape, and the associative functional setting relationship between the priory and assets that were within its ownership or financial control. These are elements of its setting that make a positive contribution to the understanding of its heritage interests.

7.10.23 Embedded mitigation is provided in the form of a set-back panel-free zone to the south-west and east of the scheduled (1008685) and non-designated (ML1520244) extents of the priory. The site of the probable associated medieval building (AEC008) is also retained in situ within a panel-free buffer area comprising the full extent of Field 45. This is shown in **ES Volume 2: Figure 2-4 [EN010131/APP/3.2]** and set out in the Outline Design Principles **[EN010131/APP/2.3].** These panel-free areas allow appreciation of the topographical low-lying 'bowl' around the priory site which contributes to the understanding of the siting of the asset in relation to Cistercian devotional practice and farming. The Scheme includes the installation of solar panels in fields to the south, east and north-east of the scheduled and non-designated extents of the priory, approximately 60m north of the scheduled area at its closest extent, but generally at a distance of approximately 150m to 200m from the scheduled area. At the south end of the non-designated extent of the asset, the Scheme is located immediately beyond the field boundary. This is 350m from the extent of the scheduled area. The land immediately to the west of the asset is outside the Site and the closest solar PV panels to the west will

be approximately 500m area on the other side of the railway line. The Scheme avoids the full known extent of the earthwork and buried remains of the priory (1008685, MLI150244 and AEC008) and the remains of known medieval agriculture adjacent (MLI54016 and MLI54022) and maintains understanding of the topographical and farmland setting of the asset.

7.10.24 The presence of the Scheme across the wider farmland is therefore assessed as resulting in a **very low** magnitude of impact (for the lifespan of the Scheme), through changes to the setting of the assets (1008685, MLI150244 and AEC008), having little effect on the ability to understand their heritage interests and avoiding physical impacts to their known extents. On an asset of **high value** this results in a **minor adverse** significance of effect. This is considered to be **not significant**.

Fleet Plantation moated site (1008594), HER (MNT15343; MNT4640)

7.10.25 Fleet Plantation moated site (1008594) is a scheduled monument of high value, located approximately 110m south of the Grid Connection Corridor boundary. The value of the asset is derived from its archaeological and historic interest as it comprises the buried remains of a well-defined medieval moated site. The remains of a causeway across the moat are visible approximately mid-way along the north side. Scattered brick and tile indicated that a 16th or 17th century building formerly stood on the site, which was preceded by a medieval timber building.

7.10.26 The setting of the moated site is defined by its immediate location within a rural landscape. Other moated sites and medieval settlements in the wider landscape also form part of the setting of the asset as they contribute to the understanding of the moated site's position in the landscape that provides information on of the distribution of wealth and status in the countryside. The setting of the asset therefore contributes to the understanding of its heritage interests.

7.10.27 The introduction of Cottam Power Station into the asset's setting towards the north has somewhat severed the asset's setting in this direction, however the rural landscape to the south, east and west of the asset is still largely preserved.

7.10.28 The Grid Connection Corridor is located within the wider rural landscape that forms part of the setting of the moated site, however the Site makes little contribution to the identified heritage interests of the asset. The moated site is entirely enclosed by woodland and any construction activities within the Grid Connection Corridor would not change our ability to understand and appreciate the heritage interest of the asset.

7.10.29 The magnitude of impact through change to the setting of the Scheduled Monument is assessed as **no change**, and on an asset of **high value**, this would result in a **neutral** significance of effect which is considered to be **not significant**.

The group of designated assets in Gate Burton non-designated parkland (MLI98360)

7.10.30 The group of designated assets in Gate Burton non-designated parkland (MLI98360) comprise the following:

- Gate Burton Hall Grade II* listed building (1359458) an asset of high value;
- The Chateau Grade II* listed building (1064085) and asset of high value;
- Gate Burton Hall Cottages Grade II listed building (1166351) an asset of high value;
- Walled Garden at Gate Burton Hall Grade II listed building (1472727) an asset of high value;
- Church of St Helen Grade II listed building (1064087) an asset of high value;
- Old Rectory Grade II listed building (1359457) an asset of high value; and
- Gateway to Gate Burton Hall Grade II listed building (1064086) an asset of high value.

7.10.31 The assets' values are drawn from their individual intrinsic architectural and historic interest, as well as their group value with one another as a collection of assets within a designed landscape of artistic interest. It is due to this additional layer of heritage interest that the Grade II listed buildings falling within the park have been assessed as being of high value, rather than medium value, as per Table 7-1. Gate Burton Hall (1359458) also has an additional layer of heritage interest in its communal historic interest as a maternity hospital during the Second World War, for the people who gave birth and worked there (most probably now deceased) as well as the children born there.

7.10.32 The setting of the buildings within the park is defined by the extent of the designed parkland garden (MLI98360) and its setting in turn. The non-designated parkland is assessed as an asset of medium value in performing this function. Its heritage value derives from its artistic and architectural interest as an example of a late 18th century designed landscape, comprising a pleasure ground and parkland, although this is diminished somewhat by later changes in the planting scheme within the parkland which alters its design intention (such as the tree belt to the south-west of the hall screening the road and views to and from the hall from that side). Archaeological interest is also provided by the presence within the parkland of the former medieval settlement of Gate Burton that was cleared to make way for the parkland, as well as parts of the parkland garden that may have been lost, altered or overgrown in the course of the last two centuries.

7.10.33 Views from the asset grouping towards the Scheme and representing the landscape in the vicinity of the Scheme both towards the asset grouping and the Site are represented by Viewpoints and/ or Photomontages 3, 6a-6f, 13, 15 and 16 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figures 10-16 and 10-20[EN010131/APP/3.2]**. The setting of the garden includes its siting, approaches and carriage drives, as well as key views of, from and within the garden. The setting assessment provided in the desk-based assessment highlighted that the southern access is the only formal entrance to the park and the approach to it from the south provides a key designed view of the principal southern frontage of the Grade II* listed Gate Burton Hall (1359458). Tree planting around the hall restricts views from it on all but the south side and there is no intervisibility between the hall and the Grade II* listed Chateau (1064085). Within the garden the lack of a thick woodland belt of planting on the boundary of the pleasure ground, particularly to the east, means that the

visual extent of garden bleeds into the surrounding farmed landscape with a relatively open character. This is particularly true at the southern end of the park where there are open views from and of the Grade II listed Church of St Helen (1064087) into the farmed landscape to the east and vice versa (see Viewpoints 6c and 6e in **ES Volume 2: Figure 10-20 [EN010131/APP/3.2])**. The Gate Burton tithe map of 1848 notes this land as the glebe land associated with the predecessor to the current Church of St Helen (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). Further north along the parkland boundary long views are more restricted by the topography and Burton Wood. Within the parkland, historic mapping details a series of drives, including a connection to Burton Wood which formed part of a designed carriage ride out of the pleasure ground and through the woodland. Other views are inward looking within the garden and its buildings and along its drives and footpaths.

7.10.34 The Solar and Energy Storage Park falls within the rural farmed landscape setting of the pleasure ground, and thus also the setting of the parkland's principal buildings. However, the embedded mitigation includes a panel free buffer area that extends for at least 100m from the entire park boundary and includes an additional panel free exclusion zone between the parkland and Burton Wood to its east side, as shown in **ES Volume 2: Figure 2-4 [EN010131/APP/3.2]** and set out in the Outline Design Principles **[EN010131/APP/2.3].** This serves to mitigate much of the visual impact of the Scheme, and it retains the important visual connection between the park and Burton Wood in views from within the park eastward over the farmed landscape. Views of the Scheme will be possible within the wider environs of the parkland, but these will be sufficiently distant to be understood as separate to the parkland and its design intention, and, as an extension, separate to the designed setting of the listed buildings within the park. This buffer area has been designed in consultation with Historic England.

7.10.35 The Scheme will feature an asphalt construction access with a maximum width of 8m and associated construction traffic leading east from the A156 to a construction compound located approximately 100m to the north-east of the extent of the pleasure ground. This, and the associated construction traffic movements and vegetation removal for visibility splays will be visible on approaches to the parkland on Gainsborough Road, having an urbanising effect in its setting during construction. Following construction, the vegetation will be largely replanted to provide screening of the access as detailed in the **OLEMP [EN010131/APP/7.10]**.

7.10.36 The impact of the Scheme upon this group of associated assets differs depending upon the asset under consideration. The magnitude of impact through change to the setting of the non-designated designed parkland is assessed as higher than the magnitude of impact to its individual listed buildings because the designed parkland forms only part of their heritage value, whereas for the park the design intention is the most important aspect of its heritage value, and this includes views on the approach to and out from the park. The magnitude of impact through change to the setting of the non-designated designed parkland (MLI98360) of **medium value** is therefore assessed as **low**, during construction, , resulting in a **minor adverse** significance of effect. This is considered to be **not significant**.

7.10.37 The magnitude of impact through change to the setting of the Grade II* listed Gate Burton Hall (1359458) and the Grade II listed Church of St Helen (1064087), both of **high value**, is assessed as **very low**, for the lifespan of the Scheme, resulting in a **minor adverse** significance of effect. This is considered to be **not significant**.

7.10.38 The other designated assets of **high value** within the parkland will experience **no change**, resulting in a **neutral** significance of effect. This is considered to be **not significant**.

Designated Assets in Knaith non-designated park (MLI50409)

7.10.39 There are two listed buildings in the non-designated post-medieval park at Knaith (MLI50409) comprising the Grade II* listed Church of St Mary (1064050) of high value, and the Grade II listed Knaith Hall (1359480) of medium value. The Church of St Mary is the earliest standing building in the park, dating from the 11th century. When it was built the church likely served the nearby non-designated medieval settlement at Knaith (MLI50529) that was formerly present to the north of the church. A medieval deer park (MLI50408) is thought to have been created in 1344 to serve a predecessor of the present Knaith Hall that was built in the 16th century. The remnants of the non-designated post-medieval park (MLI50409) and former deer park (MLI50529) of the Knaith estate are assets of low value, but they provide elements of the functional, historic and artistic setting for the listed buildings, which themselves have historic, archaeological, and architectural interest as examples of medieval and post-medieval religious and elite architecture. The group of assets demonstrate changes over time associated with changes in ownership, fashion, use and levels of investment. This is informed by their place within the park and their relationship to each other and the other assets within the park and wider estate, including the 19th century farms at North Park Farm (MLI118134), South Park Farm (1064051) and Central Park Farm (MLI118137). In the 19th century the estate was effectively merged with the Gate Burton estate and Knaith Hall became the Dower House to Gate Burton Hall. This connection also forms part of the heritage interest and setting of the hall.

7.10.40 The setting assessment notes that views from the hall are focused on the church, the River Trent and the landscape to the west of the river, in which West Burton Power Station now features prominently. The local topography rises to the east of the hall restricting views across the park from the hall and providing it and the church with a sense of privacy and enclosure to that side, despite the presence of Gainsborough Road in proximity to these assets. The retraction of the extent of the designed gardens within the modern landscape to the west side Gainsborough Road contributes to this sense of enclosure.

7.10.41 The Scheme will not result in visual changes in the setting of these assets; however, it occupies land within the former parkland estate and therefore introduces changes within the contextual setting of the assets. The Scheme will introduce solar panels into the east end of the estate, at a distance of approximately 850m to the south-east of the hall and church, at their closest extent. The Scheme will occupy approximately 45% of Knaith parish, which is assumed to correlate with the former Knaith estate and deer park (MLI50409). Despite this change, the associated buildings and existing field boundaries

and woodland within the estate will be retained and so will the relationships between these assets.

7.10.42 The magnitude of impact through change to the setting of the former post-medieval park (MLI50409) of **low value** is assessed as **no change** since the changes within the wider estate will not alter the design intention of the remnant park and no visual changes will occur. This results in a **neutra**l significance of effect. This is considered to be **not significant**.

7.10.43 The magnitude of impact through change to the setting of the former medieval deer park (MLI50529) of low **value** is assessed as **no change** since the asset is no longer understood in the modern landscape. This results in a **neutra**l significance of effect. This is considered to be **not significant**.

7.10.44 The magnitude of impact through change to the setting of the Grade II* listed Church of St Mary (1064050) of **high value**, is assessed as **no change** since the Scheme takes place at a distance from the asset and the relationship between the church and the wider parish is not readily understood in the modern landscape. This results in a **neutral** significance of effect. This is considered to be **not significant**.

7.10.45 The magnitude of impact through change to the setting of the Grade II listed Knaith Hall (1359480) of **medium value**, is assessed as **very low** due to the Scheme occupying a large proportion of the wider estate and the farmland associated with the 19th century estate farms within it. This will have little effect on the ability to understand the heritage interests of the asset, and results in a **negligible** significance of effect. This is considered to be **not significant**.

Designated Assets in Willingham by Stow

7.10.46 Three Grade II listed buildings of medium value in Willingham by Stow were scoped in to assessment in this chapter comprising the Church of Helen (1146826); Willingham House (1359509) and Grange Farmhouse (1308795). The Church of St Helen is the only surviving building of medieval date within the settlement, and it has architectural and historic interest as an example of rural medieval architecture and religious practice. The association of the church with the regionally significant artist J. C Nattes provides artistic interest. The church also has archaeological interest in its phases of development and construction styles and techniques. The church forms a group with Willingham House (1359509) to its west side, which was built as its rectory, initially in 1605, though the present building dates to the early-18th century remodelling. Grange Farmhouse (1308795) is located to the north of the church and may be associated with it due to the name. It is a mid-18th century double-fronted farmhouse and associated non-designated 19th century farm buildings (MLI118111), of architectural and historic interest as an 18th century farm. The farmland immediately to the west of the farm has been developed for housing, but to the rear, north side, the asset backs onto fields which contribute to its heritage value.

7.10.47 Views in the vicinity of the assets are represented by Viewpoints and Photomontages 9 and 19 of ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1], presented in ES Volume 2: Figure 10-16 [EN010131/APP/3.2]. The setting of these assets is defined by their place within the rural settlement of Willingham by Stow. The prominent

placement of the Church of St Helen within the settlement demonstrates the central place of the church in medieval and later centuries. Its relationship with the rectory to its south side and Grange Farmhouse to its north side is an important aspect of the church's setting and features in a key view on High Street looking east. The surrounding agricultural landscape immediately around the settlement and on the approaches to it on historic routes from all sides also contributes to understanding of the settlement's rural connections.

7.10.48 The Scheme will introduce solar panels into the farmed landscape to the west of the settlement and will be visible on approach to the settlement on Marton Road, however it will not impact upon the identified key view of these assets, and it will not occupy the farmland immediately associated with Grange Farmhouse. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, as it would result in little change in the ability to understand and appreciate the heritage interests of the assets. On these assets of **medium** value, this results in a **negligible** significance of effect. This is considered to be **not significant**.

Church of St Mary Grade I listed building in Stow (1146624) and Benedictine Abbey and College scheduled monument (1012976)

7.10.49 The Church of St Mary at Stow (1146624) is a Grade I listed building of high value, that is located within, and associated with, the scheduled monument comprising the buried archaeological remains of a Benedictine abbey and college (1012976), also of high value. The value of the asset is derived from its architectural, archaeological, artistic and historic interest as a religious institution that can be traced from its collegiate origin in the Anglo-Saxon period, through its reform as a Benedictine monastery, and then its decline to parish church status. The asset has archaeological and architectural interest in its development sequence and medieval origins, and illustrative and communal historical interest in its demonstration of the central place of the church in people's lives, and settlements.

7.10.50 The prominence of the church in the surrounding landscape demonstrates that its importance extended well beyond the boundary of the settlement. This was part of the original design intention; to demonstrate the importance of religion and community and to act as a landmark structure used in the surrounding rural landscape for wayfinding. The church's setting is therefore informed by its functional and visual setting relationship with its churchyard and the settlement of Stow, as well as with its surrounding rural landscape and prominence in views towards the settlement.

7.10.51 The Site is located approximately 1.5km north-west of the asset and views of the Church of St Mary are possible from various locations within the Site and on the roads around its perimeter. The land within the Site, although at distance from the asset, therefore forms part of its rural landscape setting. Views from the top of the church tower over the surrounding landscape would feature views of the Site and views would be possible in the surrounding landscape that feature the Scheme and the Church of St Mary in combination. The change in use of the land within the Site would remove an element of the rural farmed landscape setting of the asset, although the farmland setting in the immediate vicinity of the asset would be retained in its current form and no identified key views of the asset would be obstructed by the Scheme. This is

assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, as it would result in little change in the ability to understand and appreciate the heritage interests of the asset. On an asset of **high** value, this results in a **minor adverse** significance of effect. This is considered to be **not significant**.

South Park Farmhouse Grade II listed building (1064051)

7.10.52 South Park Farmhouse (1064051) is a Grade II listed building of medium value. It occupies part of the site of the former Heynings Priory scheduled monument (1008685) discussed above. Its value is drawn from its architectural and historic interest as an example of a large 19th century farmhouse. The majority of its associated historic farmstead ranges have been demolished and replaced with larger modern agricultural units that are out of scale and character with the farmhouse. The loss of most of the historic farm ranges diminishes the contribution made by the farmyard to the setting and heritage values of the farmhouse. The addition of the larger farm ranges detracts from the asset's setting, but they do maintain the farm in active use which provides valuable contextual understanding for the farmhouse.

7.10.53 Views in the vicinity of the assets are represented by Viewpoints and Photomontages 3a-3c of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figure 10-20 [EN010131/APP/3.2]**. The setting assessment noted that the garden and the surrounding farmed landscape provide the aesthetic and functional setting of the farmhouse, contributing to an understanding of its historic and current function and heritage value. A key view of the farmhouse is achieved from Kexby Lane to the north of the asset. Views from the farmhouse are focused to the north, whilst views southward overlook the garden with mature trees along its southern boundary restricting long views over farmland to the south. Likewise, there are mature trees along the western boundary of the garden screening long views on that side. To the east and south-east views are largely screened by the large modern agricultural buildings.

7.10.54 Embedded mitigation is provided in the form of a set-back panel-free zone to the south of the farmhouse. The Scheme will introduce solar panels in fields to the south, east and north-east of the farmhouse, as well as at distance to the west. To the north-east, the closest extent of the Site is approximately 300m from the asset, to the east and south-east it is approximately 270m from the asset at its closest extent, and to the south the Solar Energy and Storage Park is approximately 400m from the asset. The land immediately to the west of the asset is outside the Solar Energy and Storage Park and closest solar panels would be approximately 600m to the west of the asset on the opposite side of the railway line. This provides a large green buffer zone around the farmhouse that maintains its visual setting. In terms of the asset's farmland context, the Scheme will cover approximately 70% of its 19th century extent as indicated in the Knaith tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). Due to the sensitive placement of the Scheme, this would have little effect on the ability to understand the asset's heritage interests and the existing field boundaries will be retained. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, on an asset of **medium** value, resulting in a **negligible** significance of effect. This is considered to be **not significant**.

Non-designated Assets

Clay Farm (MLI118141)

7.10.55 Clay Farm (MLI118141) is a non-designated heritage asset of low value. Its value is drawn from its architectural and historic interest as a 19th century farmhouse and farmstead that survives largely intact, although with modern additions. Views in the vicinity of the asset are represented by Viewpoints and Photomontages 2 and 4 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figure 10-16 [EN010131/APP/3.2]**. The setting of the asset includes its gardens to the north and south of the farmhouse, both of which are bounded by mature tree planting. The railway runs immediately to the west of the asset and visually severs it from the farmland on the opposite side of the line, such that the visual farmland setting of the asset, which provides an understanding of its historic function, is limited to the fields to the north, east and south. Embedded mitigation is provided in the form of a set-back panel-free zone around the farmhouse. The Scheme will introduce solar panels around the asset on all sides, at a distance of approximately 80m to the south-east of the farmhouse and 130m to the north-east of the farmhouse. This will substantially alter the asset's farmland context, covering approximately 90% of its 19th century extent as indicated in the Gate Burton tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). This would affect the ability to understand its heritage interests, although the existing field boundaries will be retained. This is assessed as a **medium** magnitude of impact, for the lifespan of the Scheme, on an asset of **low value**, resulting in a **minor adverse** significance of effect**.** This is considered to be **not significant**.

Farmhouse at former Siding Farm (ML841686)

7.10.56 Siding Farm (MLI118136) is a non-designated farmhouse of very low value. Its limited value is gained from its historic and architectural interest as an example of a small 19th century farmhouse. The fields surrounding the asset contribute to its understanding as a farmhouse. However, this has been much diminished by the loss of the farmstead ranges. The setting of the asset therefore makes a limited contribution to its heritage value by providing an understanding of its historic function. Embedded mitigation is provided in the form of a set-back panel-free zone around the farmhouse. The Scheme will introduce solar panels around the asset on all sides, at a distance of approximately 50m to 70m. This will substantially alter the asset's farmland context, covering approximately 95% of its 19th century extent as indicated in the Knaith tithe map of 1848 (see Figure 5 in **ES Volume 3, Appendix 7-A [EN010131/APP/3.3]**). This would affect the ability to understand the asset's heritage interests, although the existing field boundaries will be retained. This is assessed as a **medium** magnitude of impact, for the lifespan of the Scheme, on an asset of **very low** value, resulting in a **negligible** significance of effect. This is considered to be **not significant**.

Homestead Stackyard and Gate Burton School (MLI116422)

7.10.57 Homestead Stackyard and Gate Burton School (MLI116422) is a non-designated heritage asset of medium value. Its value is drawn from its architectural and historic interest as a 19th century farmhouse and farmstead

with a later 19th century school house added to its south side. The asset survives largely intact, although with modern additions and the schoolhouse converted to residential use. Added historic interest is provided by its place within the non-designated parkland at Gate Burton (MLI98360) and the value of the asset is placed at medium rather than low due to this associative historic interest and parkland setting. The setting of the asset includes its association with the park and the small collection of buildings at the south end of the park, as well as its farmland context, which provides an understanding of its historic function although the visual connection with its former farmland is not a feature of its setting and the farm is not readily understood as connected with its former farmland in the modern landscape. Embedded mitigation is provided in the form of a panel-free buffer area in the field to the south of the asset and along the eastern boundary of parkland at Gate Burton. The Scheme will introduce solar panels to the south-east of the asset, at a distance of approximately 235m at its closest extent. This will alter the asset's wider farmland context, covering approximately 30% of its 19th century extent as indicated in the Gate Burton tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). This would have little effect on the ability to understand the asset's heritage interests, and the existing field boundaries will be retained. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, on an asset of **medium value**, resulting in a **negligible** significance of effect**.** This is considered to be **not significant**.

Sandebus Farm (MLI118123)

7.10.58 Sandebus Farm (MLI118123) is a non-designated heritage asset of very low value. Its value is drawn from its historic interest as a 19th century farmhouse, but this is diminished by later alterations and the loss of its associated farmstead buildings. Views in the vicinity of the asset are represented by Viewpoints and Photomontages 17 and 18 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figure 10-16 [EN010131/APP/3.2]**. The setting of the asset includes the modern farm buildings to its east side and its surrounding farmed landscape which provides an understanding of its historic function. This includes the relict strip fields to the north of the asset. Embedded mitigation is provided in the form of a set-back panel-free zone in the field to the west of the farmhouse. The Scheme will introduce solar panels in the farmland around the asset to the west, north and east, at a distance of approximately 235m to the north-west of the farmhouse at its closest extent. This will alter the asset's wider farmland context, but it would have little effect on the ability to understand its heritage interests and the existing field boundaries, including the relict strip fields, will be retained. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, on an asset of **very low value**, resulting in a **negligible** significance of effect**.** This is considered to be **not significant**.

Central Park Farm (MLI118137)

7.10.59 Central Park Farm (MLI118137) is a non-designated heritage asset of low value. Its value is drawn from its architectural and historic interest as a 19th century farmhouse and farmstead that survives largely intact, although with modern additions. A further layer of historic interest is provided by the farm association with the Knaith estate and its group value with North Park Farm

(MLI118134) and South Park Farm (1064051) within the estate. The setting of the farm comprises its garden to the south of the farmhouse, its surrounding functional farmland, and its place within the Knaith estate with the associated buildings and other estate farms. Embedded mitigation is provided by a panel-free exclusion zone to the north and south-east of the farm. The Scheme will introduce solar panels to the south-west of the farm beyond a bank of existing woodland. Whilst there would be limited visual intrusion, the Scheme would cover approximately 60% of the 19th century extent of its associated farmland as indicated in the Knaith tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**). This would have little effect on the ability to understand the asset's heritage interests and the existing field boundaries will be retained. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, on an asset of **low value**, resulting in a **negligible** significance of effect**.** This is considered to be **not significant**.

Stephenson's Hill House (MLI118133)

7.10.60 Stephenson's Hill House (MLI118133) is a non-designated heritage asset of low value. Its value is drawn from its architectural and historic interest as a 19th century farmhouse and farmstead that survives partially intact. It has an added layer of significance in its association as part of the Knaith estate. Views in the vicinity of the asset are represented by Viewpoint and Photomontage 12 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figures 10-16 [EN010131/APP/3.2]**. The setting of the farm comprises its garden to the west of the farmhouse, its surrounding functional farmland, and its place within the Knaith estate with the associated buildings and other estate farms. The Scheme will introduce solar panels to the east of the asset, at a distance of approximately 250m, but the farmland historically associated with the farm, as indicated on the Knaith tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**), would not be impacted. It is not considered that the Scheme would impact upon the ability to understand the farm's heritage interests and is assessed as making **no change** on this asset of **low value**, resulting in a **neutral** significance of effect**.** This is considered to be **not significant.**

North Park Farm (MLI118134)

7.10.61 North Park Farm (MLI118134) is a non-designated heritage asset of low value. Its value is drawn from its architectural and historic interest as a 19th century farmhouse and farmstead, although this is diminished by its conversion to residential use. A further layer of historic interest is provided by the farm's association with the Knaith estate and its group value with Central Park Farm (MLI118137) and South Park Farm (1064051) within the estate. Views in the vicinity of the asset are represented by Viewpoint and Photomontage 11 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figures 10-16 [EN010131/APP/3.2]**. The setting of the farm comprises its garden to the south, its access from the north of Kexby Lane, its surrounding former farmland, and its place within the Knaith estate with the associated buildings and other estate farms. The Scheme will introduce solar panels into the landscape around the farm, although the fields immediately to the south of the farm, that are most sensitive to visual intrusion, are outside the Site boundary.

Whilst there would be limited visual intrusion, the Scheme would introduce solar panels around the asset, at a distance of approximately 250m to the east of the farm and 640m to the south. The Scheme would cover approximately 50% of the 19th century extent of its associated farmland as indicated in the Knaith tithe map of 1848 (see Figure 5 in **ES Volume 3: Appendix 7-A [EN010131/APP/3.3]**), although this would be on the opposite side of Kexby Lane, where the association between the farmland and the former farm in the modern landscape is less apparent. This would have little effect on the ability to understand the asset's heritage interests and the existing field boundaries will be retained. This is assessed as a **very low** magnitude of impact, for the lifespan of the Scheme, on an asset of **low value**, resulting in a **negligible** significance of effect**.** This is considered to be **not significant**.

Cottages south of the parkland at Gate Burton (AEC001)

7.10.62 The Cottages south of the parkland at Gate Burton (AEC001) are a non-designated heritage asset of medium value. Their value is drawn from their architectural and historic interest as 19th century estate cottages. Added historic interest is provided by their place at the entrance to the non-designated parkland at Gate Burton (MLI98360) and the value of the asset is placed at medium rather than low due to this associative historic interest and parkland setting. The setting of the cottages include their gardens and the association with the park and the small collection of buildings at the south end of the park. Embedded mitigation is provided in the form of a panel-free buffer area in the field to the east of the asset and along the eastern boundary of the parkland at Gate Burton. The Scheme will introduce solar panels to the east of the asset, at a distance of approximately 200m, however due to the local topography, these panel will not be visible in views of the asset from Gainsborough Road, or from the windows within the cottages. It is not considered that the Scheme would impact upon the ability to understand the heritage interests of the cottages and is assessed as **no change** on this asset of **medium value**, resulting in a **neutral** significance of effect**.** This is considered to be **not significant**.

House north of Clay Lane (AEC002)

7.10.63 The House north of Clay Lane (AEC002) is a non-designated heritage asset of medium value. Its value is drawn from its architectural and historic interest as a 19th century house. Added historic interest is provided by its place within the non-designated parkland at Gate Burton (MLI98360) and the value of the asset is placed at medium rather than low due to this associative historic interest and parkland setting. Views in the vicinity of the asset are represented by Viewpoint and Photomontage 16 of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figures 10-16 [EN010131/APP/3.2]**. The setting of the house includes its gardens and the association with the park and the small collection of buildings at the south end of the park. Embedded mitigation is provided in the form of a panel-free buffer area in the field to the south of the asset and along the eastern boundary of the parkland at Gate Burton. The Scheme will introduce solar panels to the south-east of the asset, at a distance of approximately 180m, however due to the local topography, these panels will not be visible in views from the asset. It is not considered that the Scheme would impact upon the ability to understand the asset's heritage interests and

is assessed as **no change** on this asset of **medium value**, resulting in a **neutral** significance of effect**.** This is considered to be **not significant**.

Kennels (AEC003)

7.10.64 The Kennels (AEC003) is a non-designated heritage asset of low value. The buildings have architectural and historic interest as part of the late-19th century development of the Knaith estate and as part of a former group of buildings set in and around Park Planation that were linked to hunting and exploitation of the estate's wildlife. The setting of the asset on the outskirts of Park Plantation contributes to this historic interest as well as providing the functional setting of the buildings. The setting also includes the building's place within the wider Knaith estate and its associative relationship with Knaith Hall. Embedded mitigation is provided in the form of a panel-free buffer area to the west of the asset. The Scheme will introduce solar panels to the south of the asset, at a distance of approximately 85m beyond a bank of existing woodland. These panels will not be visible in views from the asset and the relationship between the asset and Park Plantation would be maintained. It is not considered that the Scheme would impact upon the ability to understand the asset's heritage interests, and this is assessed as **no change** on this asset of **low value**, resulting in a **neutral** significance of effect**.** This is considered to be **not significant**.

Farmhouse at Glebe Farm (now called Park Farm) (AEC004)

7.10.65 Farmhouse at Glebe Farm (now called Park Farm) (AEC004) is a non-designated heritage asset of very low value. Its value is drawn from its historic interest as a 19th century farmhouse, but this is diminished by later alterations and the loss of its associated farmstead buildings. The setting of the asset includes large-scale, detracting, modern farm buildings to its north and west sides and its surrounding farmed landscape which provides an understanding of its historic function. The Site occupies the field to the immediate east side of the farmhouse and curves around the southern boundary of the field to the immediate south side of the farmhouse, leaving that field outside the Site. The Scheme will introduce solar panels in the farmland around the asset to the west, south and east, at a distance of approximately 35m to the east of the farmhouse at its closest extent. This will alter the asset's wider farmland context, slightly affecting the ability to understand its heritage interests, but the existing field boundaries will be retained. This is assessed as a **low** magnitude of impact, for the lifespan of the Scheme, on an asset of **very low value**, resulting in a **negligible** significance of effect**.** This is considered to be **not significant**.

Medieval and post-medieval agricultural features including ridge and furrow (MLI54010; MLI54012) and field boundary (MLI54019)

7.10.66 Two areas of medieval ridge and furrow (MLI50914, MLI54012) and a medieval field boundary are recorded within the Site. Additional ridge and furrow and post-medieval field boundaries have been identified within the Site during the trial trench evaluation. The value of these assets is derived from their archaeological and historic interest as examples of agricultural processes and land management within the local landscape. Such features are very common throughout the region, and across England as a whole, and are therefore of no more than low heritage value. .

7.10.67 The proposed works within the Solar and Energy Storage Park includes the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversion Units and Solar PV Arrays. Although the Scheme will result in physical impacts to these assets, the asset forms part of a wider landscape of medieval and post-medieval agricultural features. The proposed works would result in partial loss of a small proportion of these assets, which would slightly affect our ability to understand the heritage interests of the assets.

7.10.68 This is assessed as a permanent **low** magnitude of impact to this asset of **low value**, resulting in a **negligible** significance of effect. This is considered to be **not significant**.

Modern windpump at Clay Farm (MLI53678)

7.10.69 A wind pump was built at Clay Farm in the 1930s to supply water to the farm (MLI53678). The original pump measured 32ft high with sails and 11ft in diameter. The pump was recorded on the HER as having been out of use since 1955 and derelict in the 1990s. The remains of the pump were not identified during the walkover survey of the area, and it is assumed that any surviving remains are below ground. The asset holds limited historic interest due to the contribution it makes to the understanding of the industrial development of modern farming practices and is considered to be of very low heritage value.

7.10.70 The proposed works within the Solar and Energy Storage Park includes the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversion Units and Solar PV Arrays. The proposed works are likely to result in partial loss of any surviving remains but would hardly affect our ability to understand the heritage interests of the asset.

7.10.71 This is assessed as a permanent **very low** magnitude of impact to this asset of **very low** value, resulting in a **negligible** significance of effect. This is considered to be **not significant**.

Cropmarks of unknown date (MLI54018)

7.10.72 Potential undated cropmarks of enclosures and a boundary ditch were recorded during an aerial photograph survey in 1975-1990. The trial trench evaluation undertaken for the Scheme identified six ditches in total, some of which appeared to form right angles to each other. Roman pottery was identified in three of the ditches, suggesting that these features form elements of a dispersed Romano-British field system. The value of the asset derives from its archaeological interest due to the information it contains regarding land management during the Roman period and is considered to be of low value.

7.10.73 The proposed works within the Solar and Energy Storage Park include the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversation Units and Solar PV Arrays. Although the Scheme will result in physical impacts to this asset, the asset forms part of a wider landscape of dispersed Romano-British field systems. The proposed works would result in partial loss of this asset, which would slightly affect our ability to understand the heritage interests of the assets.

7.10.74 This is assessed as a permanent **low** magnitude of impact to this asset of **low value**, resulting in a **negligible** significance of effect. This is considered to be **not significant.**

Cropmarks of undated rectangular enclosure (MLI90939; AEC007)

7.10.75 Cropmarks of an undated rectangular enclosure were recorded from aerial photographs and satellite imagery. The aerial photo and LiDAR assessment undertaken for the Scheme confirmed the location of the rectangular enclosure and the trial trench evaluation undertaken for the Scheme included a single trench targeting the feature in order to determine its nature and significance. Two ditches were identified, which each measured up to 4.5m wide and up to 0.62m deep. No finds were retrieved to aid with interpretation and as such it is unclear if this feature is archaeological or geological in nature. The asset is considered to be of archaeological interest and, although it is undated, it may be associated with the Iron Age / Romano-British activity that is evident across the Site, and as such could be of medium value.

7.10.76 The proposed works within the Solar and Energy Storage Park include the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversation Units and Solar PV Arrays. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the asset.

7.10.77 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium** value, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Romano-British settlement site (AEC009)

7.10.78 A dense complex of rectilinear enclosures was identified extending across Fields 21 and 23 during the trial trench evaluation undertaken for the Scheme. Within the complex, ditches, gullies, furrows, pits and a single inhumation were identified. A large artefact assemblage, dominated by pottery, ceramic building material (CBM) and animal bone was recovered from the features. Heat-affected pottery identified towards the south of the complex suggests the potential for pottery production in the area, whilst CBM from the north of the area suggests the possible existence of a Romanised building in the vicinity. The value of the asset derives from its archaeological interest for the information it contains regarding Romano-British settlement activity, land management and burial practices, and is considered to be of medium value.

7.10.79 The proposed works within the Solar and Energy Storage Park include the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversation Units and Solar PV Arrays. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the assets.

7.10.80 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium** value, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Iron Age / Romano-British enclosure (AEC010)

7.10.81 Within Field 24, a ditch that appeared to form part of a rectangular enclosure was identified during the trial trench evaluation undertaken for the Scheme. Additional ditches and two pits were identified to the north of this feature, which may represent further elements of the enclosure system. Late Iron Age / Romano-British pottery was identified in all of the features. The value of the asset derives from its archaeological interest for the information it contains regarding Romano-British settlement activity and is considered to be of medium value.

7.10.82 The proposed works within the Solar and Energy Storage Park include the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversation Units and Solar PV Arrays. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the assets.

7.10.83 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium** value, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Romano-British field system (AEC011)

7.10.84 Within Field 68, two ditches and a pit were identified during the trial trench evaluation undertaken for the Scheme. The features probably form part of a Romano-British field system and associated features. The geophysical survey recorded additional linear and curvilinear features which were not identified during the trial trenching. The value of the asset derives from its archaeological interest for the information it contains regarding Romano-British settlement activity and land management and is considered to be of medium value.

7.10.85 The proposed works within the Solar and Energy Storage Park include the installation of the Solar PV Panels and trenches for cabling to connect the BESS station to the Power Conversation Units and Solar PV Arrays. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the assets.

7.10.86 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium** value, resulting in a **moderate adverse** significance of effect. This is considered to be **significant.**

Romano-British settlement site (AEC012)

7.10.87 Within Field 16, a rectilinear enclosure comprising a series of ditches and pits was identified during the trial trench evaluation undertaken for the Scheme. The features contained Romano-British pottery, iron nails, and single piece of worked bone. The density of features and range of finds suggests a small Romano-British settlement or activity area. The value of the asset derives from its archaeological interest for the information it contains regarding Romano-British settlement activity and is considered to be of medium value.

7.10.88 Embedded mitigation is provided in the form of removal of Solar PV Panels from the Scheme design in this field. During construction and operation, this

panel free area will not be used for construction or operation related activities and will be fenced off from the Scheme. The proposed works would not result in any physical impacts to this asset.

7.10.89 This is assessed as **no change** on this asset of **medium** value, resulting in a **neutral** significance of effect. This is considered to be **not significant**.

Post-medieval flood defences (MLI52488)

7.10.90 Post-medieval flood defence earthworks are recorded at Marton (MLI52488), extending partially into Field 110 of the Grid Connection Corridor. The value of this asset derives from its historic interest as an example of land management during the post-medieval period. The site is of limited archaeological and historic interest, and the heritage value of this asset is considered to be very low.

7.10.91 The proposed works within the Grid Connection Corridor include open trench excavation for cabling, starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. Only part of this asset is located within the Grid Connection Corridor and the proposed works would result in partial loss of a small proportion of this asset, which would hardly affect our ability to understand the heritage interests of the asset.

7.10.92 This is assessed as a permanent **very low** magnitude of impact to this asset of **very low value**, resulting in a **negligible** significance of effect. This is considered to be **not significant**.

The Winter Camp of the Viking Great Army at Torksey (MLI125067)

7.10.93 The location and remains of the Viking Great Army Camp are recorded at Torksey (MLI125067) and extend partially into the Grid Connection Corridor towards the south-east. The Viking Great Army Camp sat on a prominent hill with the River Trent on its western boundary. Several thousand individuals overwintered in the camp, including warriors, traders, craftworkers. Metal processing and trading was undertaken within the camp and extensive scatters of metalwork and coins have been found in the area. The value of this asset derives from its archaeological and historic interest for the information it contains about the Viking incursions in the region as well as settlement practices and industrial activity. Despite the historic documentary sources for Viking activity countrywide, very little archaeological evidence has been identified, therefore this asset is assessed as being of high value for its ability to contribute to our understanding of national and potentially international Viking activity.

7.10.94 The Winter Camp consists of substantial areas of temporary settlement, evidenced by archaeological features and early medieval metal working, along with a large number of artefacts. Archaeological evidence has also indicated that Torksey remained inhabited following the departure of the Viking camp, with evidence of industrial activity and burial practices recorded. Numerous kilns have been recorded within the area, with excavations revealing sherds of Torksey ware pottery within. Dating evidence from the sherds have revealed a date range from the 9th -11th centuries, indicating the site was used as an industrial centre after the presence of the Viking encampment. A possible

cemetery site has also been recorded within Torksey. Fieldwalking and excavations revealed a number of human remains and a magnetometer survey identified a possible boundary, recorded as a D-shaped enclosure, within which almost all of the human remains were discovered, located to the south of the modern village. Radiocarbon dating of the bones revealed a concentration of 9th-10th century remains, highlighting that the burial site was likely contemporary to the pottery production kilns. The settlement's prominent position along the River Trent meant Torksey was also known for its use of the river navigation by the end of the early medieval period.

7.10.95 Only part of this asset is located within the Grid Connection Corridor, in an area identified for access tracks. The proposed works would result in partial loss of a small proportion of this asset, which would slightly affect our ability to understand the heritage interests of the assets.

7.10.96 This is assessed as making a permanent **low** magnitude of impact to this asset of **high value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Cropmarks indicating Iron Age and Romano-British activity (MLI52472; AEC013)

7.10.97 Cropmarks of probable Romano-British activity were recorded to the east of Marton during an aerial photograph survey in 1977, and the HER record of the site extends partially into Field 102. The aerial photo and LiDAR data assessment undertaken for the Scheme identified additional linear features in Field 102, which likely form part of the cropmarks previously recorded. The trial trench evaluation undertaken for the Scheme identified a series of ditches which broadly correlated with the aerial photograph features. No finds were retrieved from the features; however, based on their form and similarity to other features in the vicinity, the features probably form part of a Romano-British field system. Located adjacent to the asset on the other side of Till Bridge Lane, an archaeological evaluation undertaken for the Cottam Solar Project identified a Romano-British settlement site.

7.10.98 The value of this asset derives from its archaeological interest for the information it contains relating to Romano-British land management and given its close proximity to a known settlement site, it may also contain information relating to settlement activity. As such, it is considered to be of medium value.

7.10.99 The proposed works within the Grid Connection Corridor include open trench excavation for cabling, starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the asset.

7.10.100 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Cropmarks of probable Roman activity (MLI52489)

7.10.101 Cropmarks of a probable Roman trackway and field boundaries were identified to the south-east of Marton (extending across Fields 106 and 107) during an

aerial photograph survey as part of the National Mapping Programme undertaken in 1992-1996. During the trial trench evaluation, no features were identified that correlate with the HER record; however, due to land access constraints, the full extent of the cropmark area was not evaluated, therefore the survival of archaeological features in this area cannot be ruled out. Should any such remains survive, the value of the asset would be derived from its archaeological interest for the information it may contain relating to Romano-British land management and settlement activity and would be considered to be of medium value.

7.10.102 The proposed works within the Grid Connection Corridor include open trench excavation for cabling, starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the assets.

7.10.103 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Cropmarks at South Leverton (MNT4983)

7.10.104 Within Fields 130, 131, 132, 136, 137, 138 and 140, a large area of undated cropmarks has been identified from aerial photographs. Analysis of the available images suggests a group of enclosures, trackways and field systems likely to be of Iron Age or Roman date. The features within the cropmark complex mostly represent rectilinear enclosures with a coaxial field system, with associated trackways and boundaries. A trackway towards the northern end of the complex runs north to south-west and is flanked by enclosures on either side. The evaluation surveys undertaken for the Scheme have confirmed and enhanced understanding of the features identified in the HER, with finds recovered during the trial trench evaluation confirming a largely Romano-British date. A ring ditch / gully was identified in Field 131 comprising two concentric gullies. No finds were recovered from the features, but their form suggests a later prehistoric / Iron Age date. The value of this asset derives from its archaeological interest for the information it contains relating to Iron Age / Romano-British settlement activity and land management, and as such it is considered to be of medium value.

7.10.105 Embedded mitigation is provided in the form of HDD below the depth of archaeological remains, which would not result in any physical impacts to parts of this asset. However, the HER record for this asset, as well as the features identified from the trial trench evaluation, extend outside of the HDD area, to the east and west.

7.10.106 The proposed works include open trench excavation for cabling, starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. Temporary access tracks may also be required within the avoidance zone for the HDD. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the assets.

7.10.107 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Iron Age / Roman settlement, Cottam (MNT15983)

7.10.108 Within Fields 125 and 126, a large (approximately 180m by 100m) curvilinear enclosure of possible Iron Age or Roman date has been identified from an aerial photograph survey undertaken as part of the National Mapping Programme. Three small circular enclosures with an average diameter of 8m were recorded within the enclosure, and a linear feature approaching the larger enclosure from the east may represent a trackway. The trial trench evaluation undertaken for the Scheme identified two oval enclosures in Field 126; no finds were retrieved from these features and as such it is unclear if these features are archaeological or geological in nature. No other features were identified. If these features do form part of an Iron Age / Romano-British settlement site, the value of this asset would derive from its archaeological interest for the information it contains relating to Iron Age / Romano-British settlement activity and land management and would be of medium value.

7.10.109 The proposed works within the Grid Connection Corridor include open trench excavation for cabling and starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the asset.

7.10.110 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Romano-British settlement site (AEC014)

7.10.111 Within Field 146, a dense concentration of features was recorded in the north-eastern corner of the field during the trial trench evaluation undertaken for the Scheme. The features correspond well with a series of rectilinear enclosures identified from the geophysical survey. Finds from these features comprise animal bone, pottery, and CBM of Romano-British date. The density of features and range of finds suggests a small Romano-British settlement or activity area. The value of this asset derives from its archaeological interest for the information it contains relating to Romano-British settlement activity, and as such it is considered to be of medium value.

7.10.112 The proposed works within the Grid Connection Corridor includes open trench excavation for cabling, starter and end pits for HDD, as well as temporary construction compounds, temporary construction lay-down areas and access tracks. The proposed works would result in the loss of multiple elements of this asset, which would affect our ability to understand the heritage interests of the asset.

7.10.113 This is assessed as a permanent **medium** magnitude of impact to this asset of **medium value**, resulting in a **moderate adverse** significance of effect. This is considered to be **significant**.

Historic Landscape

7.10.114 An assessment of the historic landscape character within the Site is provided in **ES Volume 3, Appendix 7-A: Cultural Heritage Desk Based Assessment [EN010131/APP/3.3]**. This identified elements of medium and high sensitivity to change. Whilst the majority of the Site is characterised by modern agricultural enclosures formed through 20th century boundary removal, the edges of these fields may have several periods of origin. As such, the historic boundaries of the modern field system resulting from boundary removal are considered to have medium sensitivity to change as remnants of the enclosed landscape of the 18th and 19th centuries. Ancient hedgerows and areas of ancient woodland in particular are considered to have high sensitivity to change as remnants of a medieval agricultural landscape; these are present within the Site at Burton Wood and along the surviving parish boundaries of Gate Burton and Knaith. The relict strip fields at Sandebus Farm are also of medieval origin. The short section of Tresswell parish boundary within the Grid Connection Corridor may also be medieval in origin.

7.10.115 The remnants of the enclosed landscape of the 18th and 19th centuries with Site is assessed as a historic landscape character area whose value is limited by poor preservation due to the 20th century boundary loss. These are assessed as a historic landscape character area with low value.

7.10.116 The remains of the parish boundaries of Knaith, Gate Burton and Tresswell, together with Burton Wood and the relict strip fields at Sandebus farm are assessed as averagely preserved historic landscape character areas exhibiting time depth, dating probably from the medieval period. These are assessed as a historic landscape character area with medium value.

7.10.117 Kinetic views moving through the landscape in and around the Site and wider views of the Site within the landscape are presented in **Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in **ES Volume 2: Figures 10-16, 10-17 and 10-20 [EN010131/APP/3.2]**. Embedded mitigation within the Scheme will retain existing field boundaries and hedgerows and it is not proposed to alter any aspects of ancient hedgerow or Ancient Woodland. Panel free buffer areas of between 5-10m and 15m are provided around existing hedgerows and woodland, respectively. The Scheme will introduce a limited number of new hedgerows and tree and shrub belt planting within the Site; most of these follow boundaries shown on the relevant Enclosure, tithe maps and historic OS maps, but some are new introductions into the landscape, either on the boundary of the Site or along the railway line, to screen the Scheme, or within the Site to demarcate areas of panels. Despite these new introductions, it is considered that the Scheme will not alter the ability to view and understand these historic landscape areas, and it will have little effect on legibility of the historic landscape within the Site. The historic landscape character areas, considered to be of low and medium value, will be subjected to a very low magnitude of impact, for the lifespan of the Scheme, resulting in a negligible significance of effect. This is considered to be not significant.

Operation (assumed to be 2028 to 2088)

7.10.118 Impacts during the operation of the Scheme include those associated with the ongoing operation of the development. This potentially includes impacts from lighting, operational noise, associated traffic and glint and glare.

7.10.119 The description of operational lighting provided in **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]** details that the scheme will not be permanently lit as it is envisaged that operational lighting will be controlled through infrared sensors. No impacts to heritage assets are therefore identified in relation to operational lighting.

7.10.120 The assessment presented in **ES Volume 1, Chapter 11: Noise and Vibration [EN010131/APP/3.1]** concludes that there will be no significant noise or vibration effects to human noise-sensitive receptors during operation and this includes consideration of noise caused through operational traffic. The identified noise-sensitive receptors are located at, or in proximity to, many of the heritage assets within this assessment (see noise and vibration receptors R1, R2, R4, R6. R9, R10, R11, R12, R13, R16, R17, R18, R19, R20, R21). The setting of those assets has been considered and the only asset considered to be particularly sensitive to noise intrusion is the Grade II listed Church of St Helen (1064087) in the non-designated parkland at Gate Burton due to tranquillity forming part of its illustrative historic interest as a place of worship. The predicted noise levels reported in **ES Volume 1, Chapter 11: Noise and Vibration [EN010131/APP/3.1]** have been reviewed there are no impacts predicted in relation to the setting of heritage assets through operational noise intrusion, including at the Grade II listed Church of St Helen in the parkland at Gate Burton.

7.10.121 The assessment of operational traffic was scoped out of **ES Volume 1, Chapter 13: Transport and Access [EN010131/APP/3.1]** due to the low levels of traffic and the anticipated types of vehicles required for the operation and maintenance of the Scheme. The levels of operational traffic are therefore not considered likely to result in additional or greater impact to heritage assets than the physical presence of the Scheme within an asset's setting identified at construction and no impacts are therefore identified a result of operational traffic.

7.10.122 The glint and glare assessment presented in **ES Volume 1, Chapter 15: Other Environmental Topics [EN010131/APP/3.1]** concludes that there will be no significant glint and glare effects to residential receptors during operation. The identified residential receptors are located at, or in proximity to, many of the heritage assets within this assessment (see glint and glare receptors OP1, OP4, OP9, OP10, OP11, OP12, OP13, OP16, OP17, OP18, OP19, OP20, OP21). The setting of those assets has been considered and the assets considered to be particularly sensitive to glint and glare are those within the non-designated parkland at Gate Burton (OP9, OP10, OP11, OP12) due to the visual distraction caused through glint and glare in this designed setting. The potential annual minutes of glare caused at these assets, reported in **ES Volume 1, Chapter 15: Other Environmental Topics [EN010131/APP/3.1]**, has been reviewed and there are no impacts predicted in relation to the setting of heritage assets through glint and glare, including at the assets within the parkland at Gate Burton.

7.10.123 The effect of the physical presence of the Scheme within an asset's setting, and within the historic landscape, identified during the construction phase, will remain in place throughout the lifespan of the Scheme. No additional, or increase of, significant effects are considered likely through the operational phase.

7.10.124 As demonstrated in the Photomontages produced in support of **ES Volume 1, Chapter 10: Landscape and Visual Amenity Assessment [EN010131/APP/3.1]**, presented in ES Volume 2: Figures 10-16, 10-17 and 10-20, the use of screening planting, enhancements to existing hedgerows, and the replanting of hedgerows required to be removed during construction at various locations throughout the development will assist in reducing the visibility of the Scheme, both from and towards heritage assets, and in general views moving through the landscape in the vicinity of the Scheme. For the majority of heritage assets impact reported during construction were caused through the physical presence of the Scheme within their designed and /or functional settings, rather than being solely related to views of the Scheme. As such, the maturation of screening planting during operation, whilst it assists in minimising harm to these heritage assets, is not considered capable of reducing the magnitude of impact or significance of effect reported at construction, and these impacts will remain in place throughout the lifespan of the Scheme as reported in the construction phase assessment. One area where this is not the case is in relation to the replanting of the hedgerow, to be removed for the construction access off the A156, to the north of the non-designated park at Gate Burton (MLI98360). In this case the replanting will improve the visual appearance of the Scheme within the park's setting and when combined with the associated reduction from construction-related to operational traffic numbers using the junction, this will reduce the impact of the Scheme upon this asset. The operation of the Scheme is therefore assessed as having a very low impact, for the lifespan of the Scheme, upon this asset of medium value, resulting in a negligible significance of effect. This is considered to be not significant.

7.10.125 It is not expected that the operation of the Scheme will result in any further intrusive activities and as such **no impact** to the buried archaeological assets is anticipated during this phase.

Decommissioning (assumed to be 2088 to 2090-91)

7.10.126 Likely decommissioning activities are described in **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**.

7.10.127 Following the decommissioning of the Scheme, it is considered that the Scheme, including the solar panels and associated infrastructure will be removed in accordance with the relevant statutory process at that time. The selected method of decommissioning would have due regard to health and safety, environmental impact and benefits, and economic aspects which will be set out in a **Framework Decommissioning Environmental Management Plan [EN010131/APP/7.5]**, which will be secured through the DCO. Any future maintenance, decommissioning and / or reinstatement works would be subject to prevailing legislation, guidance and permitting regimes. Landscape restoration and remediation to suitable surfaces would be undertaken. This will result in the restoration of the rural landscape. A well-designed

decommissioning scheme would not have any impact beyond the already-disturbed footprint of the Scheme and will take into account areas of archaeological deposits that have been preserved in situ; therefore, it is not anticipated that decommissioning activities would have a direct physical impact upon archaeological remains.

7.10.128 There would be temporary impacts to the setting of designated assets in the study area during decommissioning, resulting from the use of machinery to dismantle the Scheme. Decommissioning is likely to affect the setting of those heritage assets described for the construction phase above. However, impacts would be no greater than those assessed during construction. Impacts arising from decommissioning activities would be temporary and the duration would be shorter than the impacts during construction. The impacts therefore would not be greater than those reported during construction. It is also anticipated that the effects on the setting of heritage assets as a result of the physical presence of the Scheme would be limited to the lifespan of the proposed Scheme. When removed during the decommissioning phase the impact will be reversed and the land returned to its previous use. The reported significance of effect would be significantly lowered or removed completely if the Site is returned to baseline conditions.

Summary of Effects Without Additional Mitigation

7.10.129 A summary of significant effects is provided in Table 7-5.

Table 7-5 Summary of Significant Effects

Receptor	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category
Cropmarks of undated rectangular enclosure (MLI90939;AEC007)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Romano-British settlement site (AEC009)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Iron Age / Romano-British enclosure (AEC010)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Romano-British field system (AEC011)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
The Winter Camp of the Viking Great	High	Physical impacts resulting in	Low	Moderate adverse

Receptor	Sensitivity (Value)	Description of Impact	Magnitude of Impact	Effect Category
Army at Torksey (MLI125067)		partial loss of the asset		
Cropmarks indicating Iron Age and Romano-British activity (MLI52472; AEC013)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Cropmarks of probably Roman activity (MLI52489)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Iron Age / Roman settlement, Cottam (MNT15983)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Cropmarks at South Leverton (MNT4983)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse
Romano-British settlement site (AEC014)	Medium	Physical impacts resulting in the loss of multiple elements of the asset	Medium	Moderate adverse

Additional Mitigation

7.10.130 Ten heritage assets have been identified as having the potential to experience significant adverse effects as a result of the Scheme (refer to Table 7.5).

7.10.131 Where feasible, mitigation measures for archaeological assets should be considered. This would involve sensitive design measures (embedded mitigation) to avoid areas of high archaeological potential.

7.10.132 Where it is not reasonably practicable to apply design mitigation to the management of the archaeological resource, resulting in archaeological assets to experience significant adverse effects, additional mitigation measures will be applied.

7.10.133 Additional mitigation measures will comprise excavation and recording (strip, map and record) of archaeological remains in advance of construction activities.

7.10.134 The archaeological mitigation sites are set out in Table 7.6 below:

Table 7-6 Archaeological Mitigation Sites

Archaeological Mitigation Site	Additional Mitigation
Cropmarks of undated rectangular enclosure (MLI90939;AEC007)	Archaeological excavation and recording
Romano-British settlement site (AEC009)	Archaeological excavation and recording
Iron Age / Romano-British enclosure (AEC010)	Archaeological excavation and recording
Romano-British field system (AEC011)	Archaeological excavation and recording
The Winter Camp of the Viking Great Army at Torksey (MLI125067)	Archaeological excavation and recording
Cropmarks indicating Iron Age and Romano-British activity (MLI52472; AEC013)	Archaeological excavation and recording
Cropmarks of probably Roman activity (MLI52489)	Archaeological excavation and recording
Iron Age / Roman settlement, Cottam (MNT15983)	Archaeological excavation and recording
Cropmarks at South Leverton (MNT4983)	Archaeological excavation and recording outside of the HDD avoidance area
Romano-British settlement site (AEC014)	Archaeological excavation and recording

7.10.135 The additional mitigation measures have been agreed in principle in consultation with the Archaeological Advisors to LCC and NCC and are set out in the Archaeological Mitigation Strategy (AMS) **[ENE010131/APP/7.6]** which is secured by Requirement 11 of Schedule 2 of the draft DCO **[EN010131/APP/6.1]**.

7.10.136 No additional mitigation is proposed for the operation and decommissioning of the Scheme.

7.11 Enhancement Measures

7.11.1 Enhancement measures, beyond those outlined in Section 7.9 as embedded within the Scheme design, which would have an additional beneficial outcome are presented below.

7.11.2 For cultural heritage this would include the retention of selected field boundaries, planted during the construction phase, that have historic precedent as indicated on relevant Enclosure, tithe and OS maps. These boundaries would enhance and reinstate elements of the historic landscape character such as the pattern of 19th century enclosures that were lost due to boundary removals in the 20th century.

7.11.3 These enhancement measures are not factored into determination of residual significant effects. However, the potential additional benefits can still be identified.

7.12 Residual Effects and Conclusions

7.12.1 This section summarises the residual significant effects of the Scheme on cultural heritage following the implementation of embedded and additional mitigation.

7.12.2 The magnitude of impact to archaeological assets (AEC009, AEC010, AEC011, MLI125067, MLI52472;AEC013, MLI52489, MNT15983, MNT4983 and AEC014) as a result of the Scheme has been assessed as medium, resulting in a moderate adverse significance of effect, which in the absence of additional mitigation, would be significant. Additional mitigation in the form of a programme of archaeological excavation and recording is proposed, as set out in the **Archaeological Mitigation Strategy [EN010131/APP/7.6]**. Archaeological excavation and recording would not minimise the physical impact to these assets, as the archaeological evidence would still be removed, but would compensate for their loss by preserving them by record. This would reduce the magnitude of impact on individual assets, resulting in a residual minor adverse effect, which is **not significant**.

7.12.3 Significant residual effects are defined as moderate or major. No significant residual effects have been identified in relation to the construction, operation and decommissioning of the Scheme.

7.13 Cumulative Assessment

7.13.1 This section presents an assessment of cumulative effects between the Scheme and other proposed and committed plans and projects including other developments.

7.13.2 This assessment has been made with reference to the methodology and guidance set out in **ES Volume 1, Chapter 5: EIA Methodology [EN010131/APP/3.1]** and the shortlist of cumulative schemes identified in **ES Volume 1, Chapter 16: Cumulative Effects and Interactions [EN010131/APP/3.1]**.

7.13.3 This cumulative effect assessment has identified for each receptor those areas where the predicted effects of the Scheme could interact with effects arising from other plans and / or projects on the same receptor based on a spatial and / or temporal basis.

7.13.4 Three schemes have been identified from **ES Volume 1, Chapter 16: Cumulative Effects and Interactions [EN010131/APP/3.1]** which have the potential to result in cumulative effects on heritage assets and these are considered below. The remaining schemes were reviewed in relation to the heritage assets identified in this assessment and no further potential for cumulative effects have been identified.

The Stow Park Road Residential Development (Ref. 141141)

7.13.5 The Stow Park Road Residential Development (Ref. 141141) comprises 39no. dwellings with associated parking and landscaping on land off Stow Park Road, which partially extends into the Scheme boundary within Field 102. This development will contribute to the impact identified in this assessment on the non-designated heritage asset (MLI52472; AEC013) through additional physical impacts to the asset. The asset comprises a series of ditches and linear features which represent an Iron Age / Romano-British field system, which extend outside of the Scheme boundary towards the north-west, extending into the redline boundary of the other development. However, it is not considered that the combined impact of these projects, either individually or together in combination with the Scheme, would raise the assessed level of impact reported in this chapter. With both schemes in place, the impact would remain medium, having impacted many key archaeological components of the asset but not resulting in total loss of the asset. On an asset of medium value, this results in a moderate adverse effect which is significant. No cumulative effect is identified.

Cottam Solar Project (Ref. EN010133) and West Burton Solar Project (Ref. EN010132)

7.13.6 The proposed Cottam Solar Project (Ref. EN010133) and West Burton Solar Project (Ref. EN010132) will contribute to the impact identified in this assessment on the Grade I listed Church of St Mary at Stow (1146624) through additional development within its wider landscape setting. However, it is not considered that the combined impact of these projects, either individually or together in combination with the Scheme, would raise the assessed level of impact reported in this chapter. With all three schemes in

place the impact to the asset would remain very low, having little effect on the ability to understand its heritage interests. On an asset of high value this results in a minor adverse effect which is not significant. No cumulative effect is identified.

7.13.7 As detailed in **ES Volume 1, Chapter 5: EIA Methodology [EN010131/APP/3.1]** the Grid Connection Corridor has the potential to be shared with two other projects, West Burton (Ref. EN010132) and Cottam (Ref. EN010133) Solar Projects. This assessment has made a worse case assumption that the cable could be laid anywhere within the Grid Connection Corridor (with exception to the avoidance areas where HDD is used). The cumulative effect with the Cottam and West Burton solar projects will therefore be the same as that assessed for this Scheme alone, assuming the cable is within the Order limits and has the same level of mitigation secured.

7. References

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