



Frodsham Solar

Environmental Statement: Volume 1

Chapter 11: Cultural Heritage and Archaeology

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11.0 CULTURAL HERITAGE AND ARCHAEOLOGY

11.1 Introduction

11.1.1 This chapter of the Environmental Statement (ES) presents the findings of an assessment of the likely significant effects on the cultural heritage and archaeology resource of the Site and the surrounding area as a result of the Proposed Development.

11.1.2 For a detailed description of the Proposed Development, refer to **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]**

11.1.3 This chapter is accompanied by the following appendices:

- i) **ES Vol 2 Appendix 11-1: Cultural Heritage Assessment [EN010153/DR/6.2]**
- ii) **ES Vol 2 Appendix 11-2: Gazetteer of Heritage Assets and Events [EN010153/DR/6.2]**
- iii) **ES Vol 2 Appendix 11-3: Historic Map Extracts and Lidar Data [EN010153/DR/6.2]**
- iv) **ES Vol 2 Appendix 11-4: Photographic Plates [EN010153/DR/6.2]**
- v) **ES Vol 2 Appendix 11-5: Setting Assessment [EN010153/DR/6.2]**
- vi) **ES Vol 2 Appendix 11-6: Policy Tables [EN010153/DR/6.2]**

11.1.4 This chapter should be read in conjunction with

- i) **ES Vol 1 Chapter 6: Landscape and Visual [EN010153/DR/6.1]**
- ii) **ES Vol 1 Chapter 10: Ground Conditions [EN010153/DR/6.1]**

11.1.5 The following sections of this chapter include:

- i) a description of relevant legislation, planning policy and guidance which have informed the assessment;
- ii) a summary of consultation with stakeholders;

- iii) a description of the methodology for the assessment, including details of the study area and the approach to the assessment of effects;
- iv) a review of baseline conditions;
- v) details of the measures proposed to avoid or reduce environmental effects, including mitigation and design measures that form part of the Proposed Development;
- vi) an assessment of the likely significant effects on cultural heritage during the construction, operation and decommissioning phases of the Proposed Development, taking into account the measures proposed to avoid or reduce environmental effects;
- vii) identification of any further mitigation measures or monitoring required in relation to likely significant effects;
- viii) a summary of the residual effects of the Proposed Development on cultural heritage; and
- ix) assessment of any cumulative effects with other proposed developments.

Summary of Competency

- 11.1.6 This assessment was conducted by Dr. Hannah Brown and Gary Millward, BSc (Hons) MCIfA, of AOC Archaeology Group. Hannah is a Project Officer at AOC Archaeology Group with over 13 years of experience working in the commercial and academic archaeology sectors in Britain as a geophysicist and latterly as a consultant. This experience includes working on a range of EIAs, desk-based assessments and large walkover survey projects. Gary is a Project Manager at AOC Archaeology Group with over 15 years of experience working in the commercial archaeology sector in Britain as a field archaeologist and latterly as a consultant. This experience includes working on a range of EIAs, desk-based assessments, and large walkover survey projects.
- 11.1.7 The assessment has been overseen by Lynne Roy BA (hons) MSc, MCIfA. Lynne is a Senior Project Manager at AOC Archaeology Group with extensive experience in the renewable energy sector gained over the past 19 years.

Lynne has been the principal heritage consultant for over 40 wind farms and 20 solar projects in the United Kingdom and has also provided feasibility and optioneering advice for numerous renewable developments. Lynne is also experienced in designing and managing mitigation works during the construction phase of renewable energy developments.

- 11.1.8 AOC Archaeology Group is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA). This status ensures that there is regular monitoring and approval by external peers of our internal systems, standards, and skills development.
- 11.1.9 AOC Archaeology Group conforms to the standards of professional conduct outlined in the CIfA Code of Conduct, the CIfA Standard and Guidance for Historic Environment Desk Based Assessment and the CIA Standard and Guidance for Commissioning Work or Providing Consultancy Advice on the Historic Environment and all other relevant CIA standards and guidance.
- 11.1.10 AOC is ISO 9001:2015 accredited, in recognition of the Company's Quality Management System.

11.2 Legislation, Policy and Guidance

11.2.1 This ES chapter has been prepared in accordance with relevant national and local legislation, policy, and guidance on the historic environment as summarised in the following sections and outlined in **ES Vol 2 Appendix 11-6: Policy Tables [EN010153/DR/6.2]**.

11.2.2 It should be noted that this chapter does not assess the compliance of the Proposed Development against planning policy. This is provided in the **Policy Compliance Document [EN010153/DR/5.7]** and the **Planning Statement [EN010153/DR/5.6]**.

Legislation

11.2.3 Statutory protection for Listed Buildings is provided by the Planning (Listed Building and Conservation Areas) Act 1990ⁱ, and for Scheduled Monuments by the Ancient Monuments and Archaeological Areas Act 1979ⁱⁱ. Legislation relating to Registered Gardens is provided by the Historic Buildings and Ancient Monuments Act 1953ⁱⁱⁱ. Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010^{iv} is the relevant regulation for assessing the impacts on listed buildings, conservation areas and scheduled monuments for applications for development consent under the Planning Act 2008. The Levelling Up and Regeneration Act 2023^v, included further provision for designated heritage assets including Scheduled Monuments, Listed Buildings and Registered Parks and Gardens.

National Planning Policy

11.2.4 Planning policy for NSIPs is set out in a series of National Policy Statements (NPSs). The NPSs set out the Government's energy infrastructure policy for the delivery of major energy infrastructure, along with the need for new infrastructure and guidance for the determination of applications for DCOs. The NPSs provide specific guidance and criteria that applicants should cover when assessing the effects of their projects and how the Secretary of State

should consider these impacts and any mitigation measures applied. The NPSs of relevance to the Proposed Development are:

- i) Overarching NPS for Energy EN-1 (NPS EN-1^{vi});
- ii) NPS for Renewable Energy Infrastructure (NPS EN-3^{vii}); and
- iii) NPS for Electricity Networks Infrastructure (NPS EN-5^{viii}).

11.2.5 The National Planning Policy Framework (NPPF^{ix}) sets out the Government's planning policies for England and how these are expected to be applied. Paragraph 5 sets out how, while the NPPF does not contain specific policies for NSIPs, the NPPF may still be relevant when considering the determination of DCOs. Therefore, the NPPF and the accompanying online Planning Practice Guidance (PPG^x) are important and relevant national policy considerations and the EIA for the Proposed Development has taken them into account.

11.2.6 Relevant policies from the above documents for Cultural Heritage are summarised in **ES Vol 2, Appendix 11-6, Tables 1 and 2 [EN010153/DR/6.2]**.

Local Planning Policy

11.2.7 Local planning policy documents concerning Cultural Heritage that are relevant to the Proposed Development, have been outlined below and policy relevant to these documents further considered in **ES Vol 2, Appendix 11-6, Table 3 [EN010153/DR/6.2]**.

11.2.8 Cheshire West and Chester Council (CWaCC) adopted the Local Plan (Part One) Strategic Policies on 29 January 2015. The following policies are relevant to the assessment in the ES chapter:

- i) Strategic Objective 12;
- ii) STRAT 1 Sustainable Development;
- iii) ENV 5 Historic environment;
- iv) ENV 7 Alternative energy supplies.

11.2.9 The Local Plan (Part Two) Land Allocations and Detailed Policies was adopted on 18 July 2019. Section 17, Historic Environment includes detailed policies in regard to:

- i) DM 46 - Development in conservation areas;
- ii) DM 47 - Listed buildings;
- iii) DM 48 - Non-designated heritage assets;
- iv) DM 49 - Registered parks and gardens and battlefields;
- v) DM 50 - Archaeology;
- vi) DM 52 - Solar Energy.

11.2.10 The Ince Neighbourhood Plan also contains policies that are relevant to the assessment in this ES chapter.

- i) Policy HER1 – Heritage
- ii) Policy HER3 – Views and Setting of Ince Conservation Area

11.2.11 The Frodsham Neighbourhood Plan also contains Policy H6: Heritage assets which is relevant to the assessment in this ES chapter.

Guidance

11.2.12 This ES chapter adheres to the following guidance:

- i) Planning Practice Guidance (PPG) (Historic Environment section updated 2019)^{xi}
- ii) Historic England. Conservation Principles^{xii}.
- iii) Historic England. The Setting of Heritage Assets: Good Practice Advice in Planning Note 3^{xiii}.
- iv) Chartered Institute for Archaeologists (CIfA). Code of Conduct; professional ethics in archaeology^{xiv}.
- v) CIfA. Regulations for professional conduct^{xv}.

- vi) ClfA. Standard and guidance for commissioning work or providing advice on archaeology and the historic environment^{xvi}.
- vii) ClfA Standard and guidance for historic environment desk-based assessment^{xvii}.
- viii) Principles for Selection of Listed Buildings^{xviii}
- ix) Scheduled Monuments Policy Statements^{xix} Environmental Impact Assessment Handbook V5^{xx}

11.3 Assumptions and Limitations

- 11.3.1 Information relating to designated heritage assets was downloaded from the National Heritage List for England in March 2025. Data from the Cheshire HER was obtained in March and July 2024. The information presented in the gazetteer (**ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]**) regarding known heritage assets is current to this date.
- 11.3.2 This assessment is based upon data obtained from publicly accessible archives as described in the methodology section (below) and a walkover survey. The settings and intervisibility of designated assets have been assessed from publicly accessible land.
- 11.3.3 This assessment deals with known and potential archaeological deposits. All identified archaeological heritage assets within 1 km of the Site have been included as they contribute to an understanding of the historic environment baseline. As set out in the methodology, Study Areas of a 3 km and 5 km radius, around the Proposed Development (excluding the routes into the Site and the Skylark Mitigation Area), have been used for the assessment of effects on the settings of designated assets. These Study Areas are considered suitable (see Paragraph 11.5.1) to enable sound conclusions to be drawn, based on the nature of the Proposed Development, the Site and its surroundings.

Survey Assumptions and Limitations

- 11.3.4 It is acknowledged that despite the walkover survey undertaken to inform this assessment, there may be further previously unrecorded archaeological features within the Site or hitherto unknown buried remains.

11.4 Consultation and Engagement

- 11.4.1 A scoping exercise was undertaken to establish the content of the assessment, as well as the approach and methods to be used within the ES.
- 11.4.2 A Scoping Report **ES Vol 2 Appendix 1-1 [EN010153/DR/6.2]** was submitted to PINS on the 30 May 2023. The report sets out the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Proposed Development on cultural heritage and archaeology.
- 11.4.3 A Scoping Opinion was received from PINS on 10 July 2023 **ES Vol 2 Appendix 1-2 [EN010153/DR/6.2]**. The feedback received from PINS and stakeholders within the Scoping Opinion, relating to the cultural heritage and archaeology, is summarised in **Table 11-1** below.
- 11.4.4 The PEIR Consultation responses were received in December 2024. The PEIR feedback received from stakeholders relating to cultural heritage and archaeology is summarised in Table 11-2 below.
- 11.4.5 AOC Archaeology has also engaged directly with CAPAS to initiate discussion regarding any proposed archaeological evaluation of the Site and with the CWaCC Conservation & Design Team and Historic England to discuss the scope of the proposed site visits, assessments and viewpoints in relation to the setting of designated assets within the 5 km study area. This engagement and consultation undertaken in relation to cultural heritage and archaeology is summarised in **Table 11-3** below.

Table 11-1– Scoping Opinion Responses of relevance to Cultural Heritage and Archaeology

Consultee	Comment	Response
Planning Inspectorate	The Inspectorate agrees with the Applicant (Table 11-5 of the Scoping Report) that significant direct impacts of the Proposed Development on heritage assets would be limited to the construction phase and that effects during operation and decommissioning can be scoped out of the ES.	The Applicant notes this comment.
Planning Inspectorate	The Inspectorate noted the intention (paragraph 3.4.3 of the Scoping Report) to upgrade existing tracks/access roads and the construction of new tracks; this matter can be scoped out for operation and decommissioning, but the ES should include an assessment of direct impacts on archaeological assets along the access roads for the construction phase where upgrades/works are planned.	The access roads have been included in the process of establishing the baseline assets shown on historic mapping and formed part of the site visit (see ES Vol 2 Appendix 11-1 Figures 1 to 17 [EN010153/DR/6.2]). Relevant HER data covering the access track has also been obtained and is shown on ES Vol 3, Figure 11-1 [EN010153/DR/6.3] . Assessment of direct impacts has been completed where upgrades/works are planned.
Planning Inspectorate	In order for the Inspectorate to agree to scope out the matter of significant effects on designated assets during decommissioning (Table 11-5), the ES should include suitable justification/detail as to why they are not likely to occur during decommissioning.	This is included in Paragraphs 11.8.56 to 11.8.61 of this chapter.
Planning Inspectorate	In order for the Inspectorate to agree to the proposal to scope out the matter of significant effects on designated heritage assets within the Study Area not within the ZTV and not identified as having key views that include the Proposed Development, the ES should fully justify (with a supporting plan) the choice of heritage assets for inclusion in the setting assessment. The assessment should be supported by visualisations to help illustrate likely impacts. Effort should be made to agree the assessment approach, sensitive receptors and appropriate viewpoint locations for visualisations with consultation bodies including local authorities and HE.	The ES (Paragraph 11.5.1 of this chapter)) justifies the choice of heritage assets to be included, with supporting figures. Assessment approach and visualisation locations have been agreed with the local authority and HE (see below). Wider landscape context has been considered and cross referenced with ES Vol 1 Chapter 6: Landscape and Visual Amenity [EN010153/DR/6.1] as appropriate.

Consultee	Comment	Response
	The wider landscape context should be considered in the assessment as the setting influence of assets may extend beyond their strict designation boundary. Cross reference can be made to the LVIA to avoid duplication.	
Planning Inspectorate	The Inspectorate considers there is potential for decommissioning stage effects on buried archaeological resource (e.g. compaction, removal of piles, drainage changes), but notes limitations on assessment at this stage. This can be scoped out providing a draft oDEMP or security to produce one in the application documentation is provided to ensure that such matters will be considered at a later stage.	The potential for decommissioning stage effects is outlined in paragraphs 11.8.56 to 11.8.61 of this chapter. These measures will be included within the full DEMP which will be developed in substantial accordance with the outline Decommissioning Environmental Management Plan (DEMP) [EN010153/DR/7.5], as secured by DCO Requirement.
Planning Inspectorate	The proposed Study Area for assessment of setting should be agreed with the relevant consultation bodies and informed by the ZTV.	The ZTV forms the basis of study areas. Study Areas have been agreed with relevant consultation bodies (see responses below). Paragraph 11.5.1 (this chapter) justifies the choice of heritage assets to be included, with supporting figures.
Planning Inspectorate	Study areas shown on Figure 11.2 of the Scoping Report do not include access roads or the Private Wire Connection to local businesses. The latter would require trenching and paragraph 3.4.3 of the Scoping Report lists the intention to upgrade/construct new tracks. The Inspectorate considers that the ES should assess the potential for effects on heritage assets along the access roads and Protos private wire connection route.	The potential for effects on heritage assets along the access roads and Private Wire Connection to local businesses has been considered. This is set out in paragraph 11.5.2 of this chapter.
Planning Inspectorate	Cheshire West and Chester Council (CWaCC) raise in their consultation response (Appendix 2 of the Scoping Opinion) that Overton, Five Crosses (Frodsham) Conservation Area should be added to the designated heritage assets located between 1km and 3km from the Site. They also request that the setting of Helsby Hill should be considered despite being outside the 5km boundary.	These assets have been added to the Gazetteer (ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]) and assigned the following asset numbers: Asset 312: Overton, Five Crosses (Frodsham) Conservation Area; and Asset 1: Promontory Fort On Helsby Hill 250M North West Of Harmers Lake Farm Scheduled Monument.

Consultee	Comment	Response
		Assessment of the significance and levels of effect upon the settings of these Assets have been detailed within ES Vol 2 Appendix 11-5 Settings Assessment [EN010153/DR/6.2] and in Paragraphs 11.8.19 and 11.8.29 of this Chapter.
CWaCC Conservation & Design Team & the Cheshire Archaeology Planning Advisory Service (CAPAS)	CAPAS acknowledges that the methodology outlined in Section 11 of the Scoping Report (the results of which will form a chapter in the proposed EIA and will be supported by a full cultural heritage study with appropriate recommendations) is an appropriate strategy in relation to archaeological matters.	The CAPAS approved methodology in relation to archaeological matters, as set out in the Scoping Report, is included within the Cultural Heritage Assessment Baseline: ES Volume 2 Appendix 11-1 [EN010153/DR/6.2] and Section 11-5 of this chapter)
CAPAS	The following policies from LP2 should be added to the list of relevant policies (paragraph 11.3.8 of the Scoping Report): Policy DM46 - Development in conservation areas Policy DM48 - Non-designated heritage assets (typo in Scoping Report) Policy DM52 - Solar Energy	These policies are summarised and how they are addressed in the assessment is set out in ES Vol 2, Appendix 11-6, Tables 1 and 2 [EN010153/DR/6.2] .
CAPAS	CAPAS referred the Applicant to its response about peat deposits in Section 10 Ground Conditions of the Scoping Report. The ES should cross reference the issues in relation to peat with other topics referred to in the SR response.	Cross references have been made to the geotechnical studies undertaken in relation to peat presence across the Site in Paragraphs 11.6.5 to 11.6.12 of this Chapter and Section 2.3 of ES Vol 2 Appendix 11-1 [EN010153/DR/6.2] .
CWaCC Conservation & Design Team	The CWaCC Conservation & Design Team considered that Conservation Areas (and in particular their settings) may be impacted by the Proposed Development and the relevant Conservation Area Appraisals should be considered when assessing impacts on the significance of these assets. For the CWaCC area the following should be included: Frodsham (Town) Conservation Area; Overton, St Lawrence (Frodsham) Conservation Area; Overton, Five Crosses (Frodsham) Conservation Area; Castle Park (Frodsham) Conservation Area; and Ince Conservation Area.	These assets have been added to the Gazetteer (ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]) and assigned the following asset numbers: Asset 154: Frodsham (Town) Conservation Area Asset 156: Overton, St Lawrence (Frodsham) Conservation Area Asset 312: Overton, Five Crosses (Frodsham) Conservation Area Asset 155: Castle Park (Frodsham) Conservation Area Asset 313: Ince Conservation Area. Conservation Area Appraisals have been consulted where available and the assets included in the assessment (Section 1.8 of this chapter and ES Vol 2 Appendix 11-5: Setting

Consultee	Comment	Response
		Assessment [EN010153/DR/6.2]. In addition, the following Conservation Areas are also included: Asset 157: Halton Village Asset 158: Weston Village Asset 406: Elton Conservation Area.
CWaCC Conservation & Design Team	CWaCC Conservation & Design Team identified the need for clarification (in Paragraph 11.5.5 of the Scoping Report) as to scoping out of further assessment of assets within the ZTV but identified as not having key views (i.e. as to whether they would be included in the ES chapter). Further consultation with CWaCC's Conservation and Design section is recommended regarding whether the Proposed Development would appear in key views and to confirm scoping out.	All heritage assets within ZTV are included in the ES. This has been clarified in the text of this chapter. No additional assets that are not in the ZTV but may have key views backdropped by the Proposed Development have been identified to date. Section 1.8 of this chapter and ES Vol 2 Appendix 11-5: Settings Assessment [EN010153/DR/6.2].
CWaCC Conservation & Design Team	CWaCC Conservation & Design Team noted that, regarding setting impacts, the impact on the settings of heritage assets within the 5km study zone is to be included in the application, with the key area being Frodsham Conservation Area to the south of the Site. The setting of Helsby Hill should be considered, despite being outside the 5km boundary. This is a key viewpoint and the impacts on such views should be assessed.	Assessment of the significance and levels of effect upon the settings of these Assets have been detailed within ES Vol 2 Appendix 11-5 Settings Assessment [EN010153/DR/6.2] and in Paragraphs 11.8.23 and 11.8.29 (Helsby Hill) and Paragraphs 11.8.35 and 11.8.42 (Frodsham Conservation Area) of this Chapter .

Table 11-2 – PEIR Consultation Response

Consultee / Respondent	Comment	Response
Canal & River Trust	The PEIR (Chapter 11) includes consideration of the Grade II listed Boatman's Shelter and Marshgate Farmhouse in proximity to the Weaver Navigation on the basis of these assets being sited adjacent to a construction route for the Proposed Development.	The Applicant notes this comment. Details of the assessment of impacts and effects upon the Grade II listed Boatman's Shelter (Asset 112) and Marshgate Farmhouse (Asset 113) are included within ES

Consultee / Respondent	Comment	Response
	Respondent added that it concludes that the temporary increase in traffic would result in a negligible impact.	<p>Vol 2 Appendix 11-5: Settings Assessment [EN010153/DR/6.2].</p> <p>The assessment concluded that although it is anticipated that there would be a temporary increase in construction traffic and associated noise passing near to the assets, it is not anticipated that this would significantly exceed that of the existing traffic which regularly runs past across the Sutton Weaver Swing Bridge and its adjacent busy junction (which is located c.40 m to c.55 m northwest of assets).</p>
Historic England	<p>Historic England note <i>'that Chapter 11 ('Cultural Heritage and Archaeology') of the Preliminary Environmental Information Report (PEIR), which forms the basis of the consultation, deals with the majority of the impacts of the Proposed Development which fall within the remit of Historic England, although Chapters 6 ('Landscape and Visual Amenity'), 9 ('Flood Risk and Drainage') and 10 ('Ground Conditions') also contain relevant information'.</i></p> <p><i>'the study areas identified, and the scope of the assessment are appropriate. The assessment methodology is generally in line with current best practice, though we note that in Table 11-4 Grade II listed buildings and Grade II registered parks and gardens are accorded only Medium importance. These are national designations and should therefore be accorded High importance.</i></p> <p><i>However, given the nature of the development, we do not consider that this results in an under-assessment of the impact of the Proposed Development upon cultural heritage'.</i></p>	The Applicant notes this comment.

Consultee / Respondent	Comment	Response
Historic England	<p><i>'Historic England broadly agrees with the assessment of the likely impacts of the Proposed Development on heritage assets within the site, and on the settings of designated heritage assets outside it'.</i></p> <p><i>They go on to note that 'The development sits within a landscape of significant Holocene palaeoenvironmental deposits, including peat deposits representing much of the prehistoric period' and that 'While survey work has concluded that in some areas of the site peat deposits were present below a depth of 5.5m bgl, and thus would be below the current proposed pile depth of 3.5m bgl, not all areas of the site have been subjected to investigation. There are some areas where the peat could be within 3.5m of the current ground surface. Any mitigation for potential impacts should focus on these areas'.</i></p>	<p>The Applicant notes the broad agreement with the assessment of the likely impacts of the Proposed Development on heritage assets within the Site, and on the settings of designated heritage assets outside it.</p> <p>It is proposed (as per paragraph 11.9.1) that a programme of geoarchaeological investigation in the form of a purposive borehole survey would be undertaken within the southern, central and southeastern parts of the Site (outside the areas of previous canal dredging deposition) in order to ascertain the depth of preservation of any buried peat and organic deposits. The exact scope of the geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an appropriately worded Written Scheme of Investigation (WSI) . This is secured via a Requirement in Schedule 2 of the draft DCO.</p>
Historic England	<p><i>HE note that 'It is important that any changes to designs or depths of piles or cabling is discussed with Historic England as this could affect the impact on the peat deposits at lower depths...'</i></p> <p><i>The mitigation proposed at 11.9.1 is for a programme of geoarchaeological investigation in the form of a borehole survey in the southern, central and southeastern sections of the site where peat depths are unclear at present.</i></p> <p><i>We consider this to be an appropriate response, which should be agreed through consultation with CAPAS and Historic England, and secured through a Written Scheme of</i></p>	<p>The Applicant notes that HE considers the proposed programme of geoarchaeological investigation (outlined in paragraph 11.9.1) to be an appropriate response.</p> <p>As requested by HE it is proposed that the exact scope of geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an appropriately worded Written Scheme of Investigation (WSI). This is secured via a Requirement in Schedule 2 of the draft DCO.</p>

Consultee / Respondent	Comment	Response
	<i>Investigation (WSI) which should be made a requirement of the DCO'.</i>	
Historic England	<p>Historic England note that 'A broad chronology for the Ince Marshes has been established in previous work during the development of the Frodsham wind farm, with peat developing from the early/mid Holocene to the later prehistoric period. As further mitigation for the impact of the Proposed Development, we recommend a specific piece of work led by a palynologist to focus on unanswered questions on this section of peatland. This should form a single piece of work targeted on a single sequence that would help to change our understanding of the region and form a benchmark for future work. This work should involve discussions between CAPAS, Historic England and the appointed specialist/palynologist'.</p>	<p>The Applicant notes HE's position regarding the requirement for palynological analysis of any peat deposits identified via the proposed geoarchaeological investigation.</p> <p>As the exact scope of geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an appropriately worded Written Scheme of Investigation (WSI) - this would include the requirement for specialist palynological assessment. This is secured via a Requirement in Schedule 2 of the draft DCO.</p>
CWaCC Conservation & Design Team	<p>The CWaCC Conservation & Design Team notes that 'The PEIR concludes that any harm to the setting of heritage assets during construction phase would be temporary and typically experienced through increased traffic and noise. Chapter 11 identifies five assets to which the proposal would have minor adverse effects, these include a scheduled ancient monument, a registered park and garden, a number of conservation area and a Grade II listed war memorial...</p> <p>They go on to state that 'Overall, Conservation and Design agree with the assessment that any impact would be experienced in an already altered setting, and would typically only involve glimpses or long views. The asset with the highest potential for harm to its setting would be Frodsham Conservation Area, due to its proximity to the site and existing</p>	<p>The Applicant welcomes the consultee's comment. The Applicant notes this comment. Mitigation would be detailed within a Written Scheme of Investigation (WSI). This is secured via a Requirement in Schedule 2 of the draft DCO.</p>

Consultee / Respondent	Comment	Response
	<i>views out of the conservation area. Proposed mitigation includes retention of existing tree and hedgerows, with the addition of new native woodland and hedgerow. This level of mitigation is sufficient given the impact the M56 already has on these outward views. Overall, Conservation and Design support the methodology outlined in the PEIR and should mitigation measures be undertaken as described have no further comment'.</i>	
CAPAS	<p>CAPAS note that they have provided advice regarding the methodology and assessment via their scoping opinion (Ref 23/01780/SCO) and that Chapter 11 of the PEIR and its supporting appendices provided 'a sound basis on which to base the preliminary conclusions reached by the authors with regard to the likely scope of any further archaeological mitigation, conclusions which have been discussed with CAPAS and with which there is broad agreement'....</p> <p>CAPAS note due the nature of the Site 'techniques such as geophysical survey and trial trenching are unlikely to reveal significant archaeological evidence and their use is not proposed as part of any further evaluation of the site'.</p> <p>They note that Chapter 11 argues that 'ground disturbance associated with the development is unlikely to reach depth where deposits of interest, particularly peat, will be disturbed'... and that 'These conclusions are broadly accepted but not all of the proposed development area has been subject to geo-technical survey and it should be noted that at Ince marshes it was shown that the top of the upper peat lay within 1m of the present ground surface'.</p>	<p>The Applicant notes the broad agreement with the conclusion of the likely significant effects of the Proposed Development on heritage assets within the Site and that techniques such as geophysical survey are unlikely to reveal significant archaeological evidence.</p> <p>The Applicant also notes the broad acceptance of the conclusion that ground disturbance associated with the development would not reach the depth of deposits of interest.</p> <p>The Applicant notes CAPAS' comments regarding the potential for peat deposits within the Site, though CAPAS acknowledge that these have not been previously encountered at the shallow depths seen elsewhere in the Ince Marshes.</p> <p>Given the uncertainty regarding the depth of peat deposits within parts of the Proposed Development area it is proposed (as per paragraph 11.9.1) that a programme of geoarchaeological investigation in the form of a purposive borehole survey would be undertaken within the southern, central and southeastern parts of the Site (outside the areas of previous canal dredging deposition) in order to</p>

Consultee / Respondent	Comment	Response
	<p>They go on to note that <i>'It is not entirely clear why peat has not been found at a similar level at the present site, but it may be that the investigations have been carried out within a paleochannel of the Mersey or Weaver where peat never developed. This may indicate that peat does lie at shallower depths in un-surveyed parts of the site but, once again, the nature of the works may mean that any such deposits will be unaffected by the development'</i>.</p> <p>CAPAS further note that <i>'This appears to be the conclusion of the archaeological study and, should this be the case further archaeological mitigation may not be justified. However, the project is still at a fairly early stage of development and details of the design will undoubtedly be refined as further work is undertaken'</i>.</p> <p>They note that <i>'it may be that new drainage works are required given the low-lying nature of the site and digging of ditches could result in the exposure of shallow peat deposits'</i> and that <i>'Any such works would certainly be worthy of monitoring, as would those that were shown to affect some of the postmedieval features identified by the study'</i>.</p> <p>CAPAS note that <i>'whilst it is accepted that there is no requirement for further evaluation of the site it is advised that, as the design of the project is refined, there may prove to be a case for a programme of targeted mitigation, taking the form of a programme of archaeological observation and recording at specific locations with any such work secured by condition. CAPAS is available to discuss the necessity and nature of any mitigation that is judged necessary as the scheme develops'</i>.</p>	<p>ascertain the depth of preservation of any buried peat and organic deposits. The exact scope of the geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an appropriately worded Written Scheme of Investigation (WSI) which would be required to be developed pursuant to DCO Requirement.</p> <p>The Applicant notes CAPAS' comments regarding the potential for new drainage works during the Operation of the Proposed Development and the potential need for archaeological monitoring of such works. The existing SI available for the Site indicates that shallow peat is unlikely to be present. The proposed mitigation (Paragraph 11.9.1) above will provide a better understanding of the baseline conditions and depth of the peat horizon within the Site. The need for monitoring works during any Operational Phase drainage works, should, therefore, be based upon the updated baseline information provided by the completed mitigation works. If no shallow peat deposits are identified further mitigation is considered unlikely to be required.</p> <p>The erroneous assignment of observations relating to cultural heritage advice to CAPAS have been corrected to being from the Conservation & Design Team at CWaCC where relevant.</p>

Consultee / Respondent	Comment	Response
	CAPAS also highlight that ' <i>Chapter 11 appears to include some confusion concerning provision of cultural heritage advice following the submission of the scoping report; some observations have been correctly assigned to CAPAS but others, concerning the historic built environment, will have been provided by the conservation officers</i> '.	

Table 11-3 – Other Engagement Activities

Consultee	Engagement	Outcome
CAPAS	<p>The Applicant contacted CAPAS (via email 26.04.24) to initiate discussion about proposed archaeological evaluation of the Site noting that the assessment undertaken to date indicates that the depth of made ground across the Site is well understood and that this, in combination with ground conditions would limit the usefulness of geophysical survey.</p> <p>The Applicant suggested that the work undertaken as part of the desk-based assessment would provide an informed basis on which to come to a conclusion with regards to the archaeological potential of the Site, and that any further archaeological investigation work could be undertaken as a condition of planning consent and would be best focussed in the eastern part of the Site where the ground has been subject to less disturbance and dumping.</p> <p>CAPAS response to the email on the 01.05.2024 agreed that any surviving archaeological material below the dumped dredge deposits would be at a depth where it would not be affected by the Proposed Development.</p> <p>CAPAS agreed that geophysical survey (in the email dated 01.05.2024) would be unlikely to be productive in areas not subject to dumping owing to the wet ground conditions and likely ephemeral nature for archaeological deposits in such areas.</p> <p>CAPAS also agreed that any further archaeological mitigation may be secured by condition and focussed on the eastern part of the Site.</p>	<p>It is proposed (as per paragraph 11.9.1) that a programme of geoarchaeological investigation in the form of a purposive borehole survey would be undertaken within the southern, central and southeastern parts of the Site (outside the areas of previous canal dredging deposition) in order to ascertain the depth of preservation of any buried peat and organic deposits. The exact scope of the geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an</p>

Consultee	Engagement	Outcome
	The Applicant notes the planning policy requirement for submission of a full desk-based assessment which will inform the decision on the need, if any, for further mitigation. The desk-based assessment should be evidenced by the results of geotechnical investigations and should give a good indication of the stratigraphic sequence. It was agreed that a deep deposit of alluvium with two peat layers is likely to survive within the Site and that recent work at Ince marshes showed that the sequence extended back to the late Pleistocene. It was agreed by both parties that the Proposed Development may not reach depths at which peat deposits would be impacted but that the possibility of impacts from drainage should be considered.	appropriately worded Written Scheme of Investigation (WSI) which would be required to be developed pursuant to a DCO Requirement. Full archaeological baseline outlining the currently known conditions within the Site is set out in ES Vol 2 Appendix 11-1 [EN010153/DR/6.2]
CWaCC Conservation & Design Team	<p>The Applicant contacted the Built Environment Officer at CWaCC (via email 25.06.24) to discuss the proposed site visits, assessments and viewpoints in relation to the setting of designated assets within the 5 km study area. The email noted that assessment work to date had involved desk-based research and a walkover survey and that site visits and assessments in relation to the setting of designated assets within a 5 km study area were planned. A preliminary copy of the ZTV showing the location of the LVIA viewpoints to be cross-referenced as appropriate within the cultural heritage assessment. A map showing the locations of Designated Heritage Assets in relation to the Site was also included and it was noted that AOC would be undertaking an assessment of all designated assets shown that fall within the ZTV that they would be supplemented by photographs from site visits.</p> <p>The response from the Built Environment Officer at CWaCC (via email 26.06.24) stated that the information sent was helpful in understanding the assessment and that the maps provided show an extensive array of viewpoints which should be sufficient to better understand the impact of the development on the surrounding heritage assets.</p>	The Applicant notes this comment
Inspector of Ancient Monuments North West Region at Historic England	The Applicant contacted Historic England (via email 25.06.24) to discuss the proposed site visits, assessments and viewpoints in relation to the setting of designated assets within the 5 km study area as outlined above.	More information about the scope of the assessment is presented in Section 11.5 in the Chapter below.

Consultee	Engagement	Outcome
	<p>A copy of maps showing the location of Designated Heritage Assets in relation to the Site and a copy of the preliminary Zone of Theoretical Visibility (ZTV) and proposed viewpoints were also attached to the email.</p> <p>Historic England responded (via email 25.07.24) and noted that AOC had identified the range of designated heritage assets which are likely to be impacted by the Proposed Development and the proposed viewpoints were sensible. Additional viewpoints from Halton Castle, and in the vicinity of Aston were requested. AOC responded (via email 31.07.2024) noting that Halton Castle and Aston were both outside of the ZTV. Halton Castle had been visited during the assessment and no visibility was predicted. Any visualisations from these assets would not show the Proposed Development.</p> <p>The response from the Historic England (via email 31.07.24) stated that they would be happy to see the viewpoint from Halton castle removed but that the ZTV indicated some visibility from around Astin range and accordingly a viewpoint from the area would be helpful AOC responded (via email 01.08.2024) with a Suggested Location for Aston photography: Aston Lea, Aston Grange, Runcorn, WA7 3DG. 356286 377973 (SJ 562 779)</p> <p>The response from the Historic England (via email 05.08.24) stated that they were happy with the location of the proposed additional viewpoint.</p>	<p>The additional viewpoint requested by Historic England has been included as a Plate within ES Vol 2, Appendix 11-4, Plate 74, [EN010153/DR/6.2]</p>

11.5 Assessment Methodology

Study Area

11.5.1 In order to assess the potential for significant effects resulting from the Proposed Development on archaeological and cultural heritage assets, the following concentric study areas have been employed as shown on **ES Vol 3 Figures 11-3 and 11-4 [EN010153DR6.3]** as outlined in the **ES Vol 2 Appendix 1-1: Frodsham Solar Scoping Report (May 2023) [EN010153/DR/6.2]** and agreed within the **ES Vol 2 Appendix 1-2: Planning Inspectorate Scoping Opinion (July 2023) [EN010153/DR/6.2]**.

- i) The Site: all land within the Site formed the core study area, which was subject to assessment for potential direct effects. This area was subject to walkover survey and desk-based study in order to identify cultural heritage assets which may be directly or indirectly impacted by the Proposed Development.
- ii) 1 km Study Area: all known heritage assets and previous archaeological interventions within a 1 km radius of the Site were identified in order to help predict whether similar, hitherto unknown archaeological remains are likely to survive within the Site and be impacted by the Proposed Development. An assessment of potential effects on the setting of upstanding non-designated assets within this study area has also been undertaken.
- iii) 3 km Study Area: a 3 km radius set around the Proposed Development infrastructure (excluding the Main Site Access route, SPEN Grid Connection, Private Wire Connection to local businesses and the Skylark Mitigation Area) as set out in **ES Vol 1 Chapter 2.0: Proposed Development [EN010153/DR/6.1]** was employed for the assessment of potential effects on the settings of all designated heritage assets, including Scheduled Monuments, Listed Buildings (all grades), Registered Parks and Gardens (RPGs) (all grades), Registered Battlefields and Conservation Areas.

- iv) 5 km Study Area: a 5 km radius set around the Proposed Development infrastructure (excluding the Main Site Access route, SPEN Grid Connection, Private Wire Connection to local businesses and the Skylark Mitigation Area) as set out in **ES Vol 1 Chapter 2.0: Proposed Development [EN010153/DR/6.1]** was employed for the assessment of potential effects on the settings of designated heritage assets of the highest significance i.e. Scheduled Monuments, Grade I and II* Listed Buildings, Grade I and II* RPGs and Registered Battlefields.
- 11.5.2 As noted above the wider study areas are focused on the Proposed Development infrastructure namely the SADA, the grid connection to the SPEN Substation and the NBBMA. The proposed Main Site Access route, as set out in **ES Vol 1 Chapter 2.0: Proposed Development [EN010153/DR/6.1]**, is already extant and in use for the maintenance of Frodsham Wind Farm and it is therefore not considered likely that any significant direct or indirect effects on cultural heritage would arise from the use of this access road. There would be intrusive works within the Main Site Access route leading to the Site from the west to lay the underground private wire link to local businesses. However, as set out in **ES Vol 1 Chapter 2.0: Proposed Development [EN010153/DR/6.1]**, the Main Site Access route would be entirely within the footprint of the existing access track that was constructed to provide access to the Frodsham Wind Farm and thus would be within areas of previous disturbance. This approach is also confirmed within the **oCEMP [EN010153/DR/7.5]**. The only known heritage asset located within the footprint of the works is the site of the Grinsome Farm (Asset 373). The farm was excavated in advance of development of the wind farm in 2010 and the remains of a post-medieval farmhouse, yard and outbuildings of nineteenth century date were recorded. No evidence was revealed to show that the site had been occupied prior to the construction of the farm and there would be no impact on any known surviving recorded remains. On this basis, it is not considered likely that any significant direct

effects on cultural heritage would arise from construction within the Main Site Access.

Scope of Assessment

11.5.3 The scope of the baseline data gathering, including study areas and sources, was agreed with consultees through scoping as shown in Tables 11-1 to 11-3 above, and the assessment adheres to relevant policy (see **ES Vol 2, Appendix 11-6, Tables 1 to 3 [EN010153/DR/6.2]**) for undertaking assessment of archaeological and cultural effects as set out above. The identification of the historic environment baseline provides an appropriate level of interrogation of known heritage assets and allows for a robust assessment of potential impacts.

Assessment Methodology

11.5.4 The following data sources were consulted during preparation of this assessment:

- i) Historic England (HE) for:
 - a) data relating to designated assets (from the National Heritage List for England);
 - b) historical aerial photographs; and
 - c) Aerial Archaeology Mapping Explorer data and National Mapping Project (NMP) reports.
- ii) Cheshire Historic Environment Record (HER) for:
 - a) records of designated and non-designated assets and previous archaeological interventions ('Events');
 - b) historic landscape characterisation data; and
 - c) recognised Areas of Archaeological Potential.

- iii) The National Library of Scotland website for Ordnance Survey (OS) and pre-Ordnance Survey maps.
- iv) Cheshire Archives for historical maps and documents relating to past land use.
- v) National Collection of Aerial Photography (NCAP), Britain from Above, and Cambridge Air Photos websites and the Historic England online aerial photographic viewer (APEX) for historical aerial photographs.
- vi) Chester Image Bank for historical photographs of the study areas.
- vii) The Genealogist website (via AOC Archaeology Group's subscription) for historical mapping and documents.
- viii) The Environment Agency National LiDAR Programme for LiDAR data.
- ix) The British Geological Survey materials and geotechnical investigation reports for information pertaining to the character of below ground deposits and potential for preservation of paleoenvironmental remains.
- x) Other published and open-access resources for information relating to past land use, historical development and preservation of heritage assets within the study areas.

11.5.5 References for all sources consulted during the assessment are listed in Section 7 of the accompanying Cultural Heritage Assessment **ES Vol 2 Appendix 11-1 [EN010153/DR/6.2]**.

11.5.6 A walkover survey of the Site was undertaken to identify any hitherto unrecorded visible remains and to establish the survival, extent, significance and interrelationships of previously recorded assets.

11.5.7 Setting assessment site visits were carried out to designated assets (as detailed below) to establish their current settings and any potential impact the Proposed Development may have on them.

11.5.8 This chapter has been supported by a detailed zone of theoretical visibility (ZTV), which has been used to identify assets intervisible with the Proposed Development and/or where the Proposed Development would appear in key

views to and from assets. The methodology for the preparation of the ZTVs is provided in **ES Vol 1 Chapter 6: Landscape and Visual Amenity [EN010153/DR/6.1]**.

Assessment of Significance / Assessment Criteria

11.5.9 This sub-section sets out the methodology for assessing effects both direct physical and setting impacts on heritage assets. It takes account of NPS EN-1^{xxi} and NPS EN-3^{xxii}, NPPF^{xxiii}, PPG^{xxiv} and Historic England's Good Practice Advice Note 3: The Setting of Heritage Assets^{xxv}.

11.5.10 The assessment distinguishes between the term 'impact' and 'effect'. An impact is defined as a physical change to a heritage asset or its setting, whereas an effect refers to the heritage significance of this impact. The first stage of the assessment involves establishing the importance of the heritage asset and assessing the relative sensitivity of the asset to change (impact). Using the Design Parameters set out in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]** and the extent of works allowed for in the **Works Plans [EN-10153/DR/2.3]**, an assessment of the impact magnitude is made and a judgement regarding the level of effect is arrived at.

Criteria for Assessing Importance & Relative Sensitivity

11.5.11 The definition of cultural significance is readily accepted by heritage professionals both in the UK and internationally and was first fully outlined in the Burra Charter, Article One of which identifies that 'cultural significance' or 'cultural heritage value' means aesthetic, historic, scientific, social or spiritual value for past, present or future generations^{xxvi}. This definition has since been adopted by heritage organisations around the world, including HE. NPS EN-1 at paragraphs 5.9.2 and 5.9.3 defines the historic environment as including:

"...all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, landscaped and planted or managed flora.

“Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called ‘heritage assets’. Heritage assets may be buildings, monuments, sites, places, areas or landscapes, or any combination of these. The sum of the heritage interests that a heritage asset holds is referred to as its significance. Significance derives not only from a heritage asset’s physical presence, but also from its setting.” xxvii

11.5.12 All heritage assets have some significance; however, some assets are judged to be more important than others. The level of that importance is, from a cultural resource management perspective, determined by establishing the asset’s capacity to inform present or future generations about the past. In the case of many heritage assets their importance has already been established through the designation (i.e. scheduling, listing and register) processes applied by HE.

11.5.13 The rating of importance of heritage assets is first and foremost made in reference to their designation and to NPS EN-1^{xxviii}, NPS EN-3^{xxix} and the NPPF^{xxx}. For non-designated assets, importance will be assigned based on professional judgement and guided by the criteria presented in **Table 11-4** below; which itself relates to the criteria for designations as drawn from the Department for Digital, Culture, Media and Sport (DDCMS) publication, Principles for Selection of Listed Buildings^{xxxi} and the Scheduled Monuments Policy Statements published by the same body^{xxxii}, which outline the criteria for designating heritage assets, and the HE guidance written to expand upon the guidance by DDCMS.

Table 11-4 - Criteria for Establishing Importance of Heritage Assets

Importance	Criteria
Very High	World Heritage Sites; Other designated or non-designated assets with demonstrable Outstanding Universal Value.
High	Scheduled Monuments (Actual and Potential) ^{xxxiii} ; Grade I and II* Listed Buildings ^{xxxiv} ;

Importance	Criteria
	<p>Grade I and II* Registered Parks and Gardens^{xxxv};</p> <p>Registered Battlefields^{xxxvi};</p> <p>Outstanding examples of some period, style or type;</p> <p>Non-designated assets considered to meet the criteria for the designation as per the types and grades of designation noted above (as stated in NPS EN-1^{xxxvii}, NPS EN-3^{xxxviii}, NPPF^{xxxix} and PPG^{xl}).</p>
Medium	<p>Grade II Listed Buildings;</p> <p>Grade II Registered Parks and Gardens;</p> <p>Conservation Areas^{xli};</p> <p>Major or representative examples of some period, style or type; or</p> <p>Non-designated assets considered to meet the criteria for the designations as set out above (as stated in NPS EN-1^{xlii}, NPS EN-3^{xliii}, NPPF^{xliiv} and PPG^{xliv})</p>
Low	<p>Locally Listed Assets;</p> <p>Examples of any period, style or type which contribute to our understanding of the historic environment at the local level;</p> <p>Non-designated heritage assets identified by local historic environment records protected by NPS EN-1^{xlvi}, NPS EN-3^{xlvi}, NPPF^{xlvi} and PPG^{xlix}</p>
Negligible	<p>Relatively numerous types of remains;</p> <p>Findspots or artefacts that have no definite archaeological remains known in their context;</p> <p>Non-designated heritage assets of lesser heritage significance (as stated in NPS EN-1^l, NPS EN-3^{li}, NPPF^{lii} and PPG^{liii})</p>

11.5.14 While determining the relative cultural significance of a heritage asset is essential for establishing its importance, it is widely recognised^{liv} that the importance of an asset is not the same as its sensitivity to changes to its setting. Thus, in determining effects upon the setting of assets by the Proposed Development, both importance and sensitivity to changes to setting need to be considered.

11.5.15 The Xi'an Declaration^{lv} set out the first internationally accepted definition of setting with regard to heritage assets and features, indicating that setting is important where it forms part of or contributes to the significance of a heritage asset. NPS EN-1 notes in footnote 231 at the end of paragraph 5.9.3 that *'The setting of a heritage asset is the surroundings in which it is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset and may affect the ability to appreciate that significance or may be neutral'*^{lvi}.

11.5.16 The HE guidance on the setting of heritage assets notes that the importance of setting *'lies in what it contributes to the significance of the heritage asset or to the ability to appreciate that significance'*^{lvii}.

11.5.17 Setting, therefore, is a key issue in the case of some, but by no means all assets. An asset of Very High or High importance does not necessarily have high sensitivity to changes to its setting (e.g. does not necessarily have a high relative sensitivity). An asset's relative sensitivity to alterations to its setting refers to its capacity to retain its ability to contribute to our understanding and appreciation of the past in the face of changes to its setting. The ability of an asset's setting to contribute to an understanding, appreciation and experience of it and its significance/cultural value also has a bearing on the sensitivity of that asset to changes to its setting. Assets with high sensitivity may be vulnerable to changes that affect their settings, and even slight changes may reduce their significance or the ability of setting to contribute to the understanding, appreciation, and experience of the asset. Less sensitive assets will be able to accommodate greater changes to their settings without a reduction in their cultural value and, in spite of such changes, the relationship between the asset and its setting will still be legible. In establishing the relative sensitivity of an asset to changes to its setting, the setting must first be identified. This assessment outlines a range of factors, through qualitative written narrative, which are considered when establishing the setting of an asset and therefore determining its sensitivity. The factors

will be assessed from known records and in the field. In defining these criteria, emphasis has been placed on establishing the current setting of each asset, how this contributes to the cultural value of the asset and how the Proposed Development would affect it.

11.5.18 The criteria for establishing an asset's relative sensitivity are outlined in **Table 11-5**. This table has been developed based on AOC's professional judgement and experience in assessing setting effects. It has been developed with reference to the policy and guidance noted above including NPS EN-1^{lviii}, NPS EN-3^{lix}, NPPF^{lx}, PPG^{lxi}, the Xi'an Declaration^{lxii} and HE's guidance on the setting of heritage assets^{lxiii}.

Table 11-5 - Criteria for Establishing Relative Sensitivity of a Heritage Asset to Changes to its Setting

Relative Sensitivity to Changes to Setting	Criteria
Very High	An asset, the setting of which is critical to an understanding, appreciation and experience of it, should be thought of as having Very High Sensitivity to changes to its setting. This is particularly relevant for assets whose settings, or elements thereof, make an essential direct contribution to their cultural value.
High	An asset, the setting of which makes a major contribution to an understanding, appreciation and experience of it, should be thought of as having High Sensitivity to changes to its setting. This is particularly relevant for assets whose settings, or elements thereof, contribute directly to their cultural value.
Medium	An asset, the setting of which makes a moderate contribution to an understanding, appreciation and experience of it, should be thought of as having Medium Sensitivity to changes to its setting. This could be an asset for which setting makes a contribution to significance but whereby its value is derived mainly from its other characteristics.
Low	An asset, the setting of which makes some contribution to an understanding, appreciation and experience of it, should generally be thought of as having Low Sensitivity to changes to its setting. This may be an asset whose value is predominantly derived from its other characteristics.
Negligible	An asset whose setting makes minimal contribution to an understanding, appreciation and experience of it should

Relative Sensitivity to Changes to Setting	Criteria
	generally be thought of as having Negligible Sensitivity to changes to its setting.

Criteria for assessing Magnitude of Impact

11.5.19 Potential impacts, that is the physical change to known heritage assets, and unknown buried archaeological remains, or changes to their settings, in the case of the Proposed Development, largely relate to the possibility of disturbing, removing or destroying in situ remains and artefacts during the construction phase or the presence of new features within their setting during the construction and operational phases.

11.5.20 The magnitude of the impacts upon heritage assets caused by the Proposed Development is rated using the classifications and criteria outlined in **Table 11-6**.

Table 11-6 - Criteria for Classifying Magnitude of Impact

Magnitude of Impact	Criteria
High	<p>Substantial loss of information content resulting from total or large-scale removal of deposits from an asset;</p> <p>Major alteration of an asset's baseline setting, which materially compromises the ability to understand, appreciate and experience the contribution that setting makes to the cultural value of the asset and erodes the key characteristics of the setting.</p>
Medium	<p>Loss of information content resulting from material alteration of the baseline conditions by removal of part of an asset;</p> <p>Alteration of an asset's baseline setting that affects the ability to understand, appreciate and experience the contribution that setting makes to the cultural value of the asset to a degree but whereby the cultural significance of the monument in its current setting remains legible. The key characteristics of the setting are not eroded.</p>
Low	<p>Detectable impacts leading to minor loss of information content.</p> <p>Alterations to the asset's baseline setting, which do not affect the ability to understand, appreciate or experience</p>

Magnitude of Impact	Criteria
	the contribution that setting makes to the asset's overall cultural value.
Negligible	Loss of a small percentage of the area of an asset's peripheral deposits; A reversible alteration to the fabric of the asset; A marginal alteration to the asset's baseline setting.
None	No effect predicted.

Criteria for assessing Significance of Effect

11.5.21 The predicted level of effect on each heritage asset is then determined by considering the asset's importance or relative sensitivity in conjunction with the predicted magnitude of the impact. The method of deriving the level of effect is provided in **Table 11-7**.

Table 11-7 - Level of Effect based on Inter-Relationship between the Importance and/or Relative Sensitivity of a Heritage Asset and/or its setting and the Magnitude of Impact

Magnitude of Impact	Importance/ Sensitivity				
	Negligible	Low	Medium	High	Very High
High	Minor	Moderate	Moderate	Major	Major
Medium	Negligible/Neutral	Minor	Moderate	Moderate	Major
Low	Negligible/Neutral	Negligible/Neutral	Minor	Minor	Moderate
Negligible	Negligible/Neutral	Negligible/Neutral	Negligible/Neutral	Minor	Minor
None	None	None	None	None	None

The levels of effect recorded in grey highlighted cells are 'significant'

11.5.22 The level of effect is judged to be the interaction of the asset's importance and / or relative sensitivity (**Tables 11-4 and 11-5**) and the magnitude of the impact (**Table 11-6**). In order to provide a level of consistency, the assessment of importance and relative sensitivity, the prediction of magnitude of impact and the assessment of level of effect are guided by pre-defined criteria. However, a qualitative descriptive narrative is also provided for each asset to summarise and explain each of the professional value judgements that have been made in establishing sensitivity and magnitude of impact for each individual asset.

11.5.23 Professional judgement has been used to establish those effects which are deemed to be significant. However, with reference to the Guidelines for Environmental Impact Assessment^{lxiv}, the level of effect determined from **Table 11-7** will help guide the assessor in their judgement. Effects determined to be moderate and greater (bold in **Table 11-7**), are most likely to be significant, while minor and lesser effects are most likely to be considered not significant.

Harm

11.5.24 NPS EN-1^{lxv} and NPS EN-3^{lxvi} require an assessment as to the level of harm that may be caused to designated assets as a result of development proposals. Whether that harm is considered to be '*substantial*' or '*less than substantial*' determines the policy test to be met^{lxvii}.

11.5.25 There are no designated heritage assets within the Site and thus there is no potential for harm arising from direct effects. As such, discussion of harm to designated assets in this assessment will relate to potential effects on their setting.

11.5.26 The PPG^{lxviii} notes that '*substantial*' harm is generally a '*high test*' and that as such it may not result in many cases. What matters in establishing whether harm is '*substantial*' or not, relates to whether a change would seriously adversely affect those attributes or elements of a designated asset that contribute to, or give it, its significance.

11.5.27 In terms of effects upon the setting of designated heritage assets, it is considered that only those effects identified as '*significant*' in this assessment have the potential to cause '*substantial*' harm. Where no significant effect is found, the harm is considered to be '*less than substantial*', or potentially not harmful at all. This is because, as set out earlier in this methodology, effects only reach the '*significant*' threshold if their relative sensitivity to changes in setting is at the higher end of scale, or if the magnitude of change is at the higher end of the scale.

11.5.28 For many assets, setting may not contribute to their significance or its contribution to significance may be limited. For these assets, even High magnitude changes to setting are unlikely to have adverse effects on the overall heritage significance of the designated asset. As stated above, lower ratings of magnitude of change tend to relate to notable or perceptible changes to setting but where these changes do not necessarily obscure or damage elements of setting or relationships which directly contribute to the significance of assets. As such, effects that are not significant will result in *'less than substantial'* harm or where there are no effects or effects are deemed to be Neutral there will be no harm.

11.5.29 Where significant effects are found in an assessment, a detailed assessment of the level of harm is made. Whilst non-significant effects will cause *'less than substantial'* or no harm, the reverse is not always true. That is, the assessment of an effect as being *'significant'* does not necessarily mean that the harm to the asset is *'substantial'*. The assessment of level of harm, where required, will be a qualitative one, and will largely depend upon whether the effects predicted would result in a major impediment to the ability to understand or appreciate the heritage asset in question by reducing or removing its information content and therefore reducing its cultural significance.

Cumulative Effects

11.5.30 The assessment of cumulative effects has been undertaken in a similar manner to that of the potential effects but has taken into consideration other developments as agreed with CWaCC, including those which are operational, under construction, consented or proposed. Cumulative effects relating to cultural heritage are for the most part limited to effects upon the settings of heritage assets, though the potential for direct and indirect effects upon buried archaeological remains by identified cumulative developments also requires assessment.

11.5.31 The cumulative assessment has had regard to the guidance on cumulative impacts upon heritage assets as set out in Environmental Impact Assessment Handbook V5^{lxix} and PINS Advice on Cumulative Effects Assessment^{lxx}, and has utilised the criteria for assessing setting effects as set out above. The assessment of cumulative effects has considered whether there would be an increased impact, either additive or synergistic, upon the setting of heritage assets as a result of adding the Proposed Development to the cumulative developments as agreed with consultees. In line with HE setting guidance consideration has been given to whether the additional change, which would result from the Proposed Development will further harm the significance of the assets^{lxxi}.

11.5.32 **ES Vol 1 Chapter 4: Methodology [EN010153/DR/6.1]** describes the approach taken to identifying projects which may give rise to likely significant cumulative effects, including the short-list of projects which will be subject to cumulative assessment. For the purposes of the ES a review of these projects has been undertaken and an analysis of potential significant cumulative effects in relation to cultural heritage and archaeology is provided in Section 11.11.

11.6 Baseline Conditions

Baseline for Potential Direct Impacts

- 11.6.1 This section sets out the salient findings of a detailed synthesis of information obtained from the consulted sources listed in paragraph 11.5.4 (above), along with a walkover survey of the Site. This has been undertaken to identify any known heritage assets and to understand the character and context of the archaeological resource and historic environment of the Site and its surroundings. The findings are provided in full in **ES Vol 2 Appendix 11-1 Cultural Heritage Baseline [EN010153/DR/6.2]** and have been used to identify sensitive receptors that may require further evaluation (see **Tables 11-9 & 11-10** and **Paragraphs 11.8.3 to 11.8.7** below).
- 11.6.2 The following text is accompanied by **ES Vol 3 Figures 11-1 to 11-4 [EN010153DR6.3])** and **ES Vol 2 Appendix 11-3 –11-5 [EN010153/DR/6.2]**. Each heritage asset or previous archaeological investigation referred to in the text has been assigned an ‘Asset/Event No.’ unique to this assessment (as plotted on the accompanying figures); the appended Gazetteer of Heritage Assets (**ES Vol 2 - Appendix 11-2 [EN010153/DR/6.2]**) contains further information on individual assets.

Current Baseline

- 11.6.3 The eastern half of the Site (east of Brook Furlong) is situated at around 5-6 m Above Ordnance Datum (AOD) on low-lying reclaimed marsh land close to the mouth of the River Weaver on the southern side of the Mersey Estuary (**ES Vol 3, Figure 11-1, [EN010153DR6.3])**. The western side of the Site (to the west of Brook Furlong) is elevated above surrounding ground by virtue of its historical use as a dredging deposit ground for the Manchester Ship Canal, this area is situated at approximated 9.5m to 12.5m AOD **ES Vol 3, Figure 11-1 [EN010153DR6.3])**. This area of the Site is separated from the saltmarsh of the estuary by the Manchester Ship Canal (MSC), and the slightly higher ground of Frodsham Score. Construction of the MSC, Weaver

sluices, Weaver Navigation and Weston Canal in the 18th and 19th centuries has heavily modified the mouth of the Weaver, which was formerly tidal as far as Frodsham Bridge. The flat land of Frodsham, Helsby and Ince Marshes remains largely open within a belt of industrial works and chemical refineries that have developed along the Mersey. Within the Frodsham, Helsby and Ince Marshes the wind turbines of Frodsham Wind Farm, numerous tall metal lattice high voltage pylons and the raised MSC dredging deposit grounds are conspicuous. To the southeast of the Site, the land rises steeply up to a series of prominent hills that constitute the northern end of a sandstone ridge, with settlements such as Frodsham overlooking the marshes from the drier ground.

- 11.6.4 British Geological Survey mapping shows that the Site is underlain by various bands of Triassic sand and mudstones, overlain by extensive tidal flat deposits of clays, silts and sands. A number of historical (non-archaeological) boreholes confirm these deposits, which reflect phases of alluvial sedimentation, including marine transgressions, as well as highlighting the likelihood of buried peat deposits across parts of the Site.
- 11.6.5 As part of the Proposed Development, a desk-based Geo-Environmental Assessment has been undertaken^{lxxii} (**ES Vol 2 Appendix 10-1 [EN010153/DR/6.2]**). This included a summary of all the previous geotechnical investigations across the area including a preliminary investigation in 2014 and a phase 2 site investigation in 2015 in relation to the Frodsham Wind Farm and further trial pit and window sample boreholes undertaken in 2024 and 2025. The desk-based Geo-Environmental Assessment summarises the ground condition and buried deposits sequences within the various areas of the Proposed Development as follows^{lxxiii}.
- 11.6.6 The western parts of the Solar Array Development Area (SADA) (to the west of Brook Furlong) are comprised of Manchester Ship Canal Dredging Grounds (MSCDG) cells 1, 2 and 5 and their associated bunds. Previous

geotechnical investigations within these cells have revealed a “*general succession of strata comprising made ground (MG) of lagoon silts within MSCDG cells to around 9 m bgl which is followed by alluvial clays and silt. This in turn is followed by a band of peat and/or organic silt of up to 3 m thick within transitions into fluvial glacial sands. Glacial till underlies the fluvio-glacial sands*”... ‘Where investigated, the bunds surrounding the MSCDG cells are noted to be composed of varying silts, clays and sand with occasional inclusions of concrete cobbles, limestone and sandstone’. Where encountered within cell 5 the ‘*peat /organic clay/silt is noted as thick., extending from 12.1 – 17.5 m bgl*’^{lxxiv}.

11.6.7 The south, southeastern and central area of the SADA is located within the Frodsham and Helsby Marshes. This area was investigated via a series of 14 window sample boreholes (5 m deep) plus a hand dug pit in June 2024. These investigations revealed that immediately below the topsoil was a sequence of tidal flat deposits composed of “*soft, light grey or mottled grey, brown silty clay to around 2.0 mbgl, which, becomes very soft to soft dark grey to black silty sandy clay to around 3.5 mbgl. Very loose to medium dense dark grey/black silty sand was encountered to the extent of the maximum drilled depth of 5.0 mbgl*”. No peat or organic deposits were encountered during the ground investigations in June 2024^{lxxv}, though it is noted that the window sample depth was 5 m and thus the presence or absence of peat at deeper depths beyond the anticipated impact of the Proposed Development remains unknown.

11.6.8 Previous geotechnical trial pits within the non-breeding bird mitigation area NBBMA have revealed a sequence of three types made ground deposits including a made ground topsoil down to 0.3 m bgl, a made ground sandy clay down to 1.2 m bgl, and a made ground black silty clay down to 3.2 m bgl, with other deeper borehole investigations in the area revealing that the sequence of made ground deposit continues beyond a depth c.10 m bgl^{lxxvi}.

- 11.6.9 Previous geotechnical investigations along the Private Wire Connection and Main Site Access route recorded dredging infill and bund materials down to a depth of c.7 m bgl overlying *“alluvial silts and sandy clays, with peat comprising black fibrous or clayey amorphous material encountered between 7.7 and 9.5 m bgl”*. These in turn overlay a sequence of fine to coarse glaciofluvial sands with glacial till encountered at the maximum depth of 21.1 m bgl^{lxxvii}.
- 11.6.10 The potential for peat deposits to yield paleoenvironmental data is demonstrated by analysis of pollen and plant macrofossils from boreholes sunk in advance of Frodsham Wind Farm development, immediately north of Moor Lane (the proposed access track for the Proposed Development) and at the western end of the former CF Fertiliser Plant, where two beds of peat represented the accumulation of organic material from the early post-glacial period to the late Bronze Age.
- 11.6.11 Analysis and radiocarbon dating of the Lower Peat deposit at Ince Marshes, which showed no indication of marine influence, continued to accumulate throughout the Mesolithic period, showing evidence of typical habitat succession from open freshwater reed swamp to sedge fen with birch and willow scrub, and hazel-dominated woodland on higher ground. Human modification of the landscape at this date is evidenced by charcoal from the upper section of the peat, which was identified as willow and/or poplar, i.e. sappy species that do not easily burn as green wood, and therefore probably represent fires of transient camps or deliberate clearance. A layer of silt overlying the peat signified waterlogging and flooding at the end of the Mesolithic, representing a gap in peat accumulation for some 2500 years. Macrofossils from the Upper Peat deposit, the base of which was dated to 4840 - 4690 cal BC, suggested the environment at this location was generally dominated by alder carr until the late Bronze Age, with signs of water table variation also causing periodic trends towards drier heathland or wetter swamp/fen. The cessation of peat accumulation reflected inundation of the area, manifest as a deposit of grey/brown silty, sandy clay.

- 11.6.12 Given the topographic similarities and proximity of the Site to Ince Marshes, it is likely that prehistoric environmental conditions were very similar; it is also likely that buried peat deposits with the potential for paleoenvironmental evidence to survive underlie parts of the Site, although the extent and current state of preservation of the peat is unclear.
- 11.6.13 The only existing records of prehistoric archaeology from within the 1 km Study Area are of several chance finds, which includes two Middle Bronze Age socketed spearheads (Asset 226) that were found on Frodsham Marsh (exact location unclear, but probably within the Site) during the construction of the MSC. The Site is overlooked by a group of Late Bronze Age - Iron Age promontory and hillforts (Assets 1 - 3) located on the sandstone ridge to the south.
- 11.6.14 No Roman remains are recorded from the Site itself, which probably continued as part of the estuary edge wetland zone during this period, with a fortlet (Asset 4) located on a small promontory of slightly elevated ground at Ince (c. 4 km southwest) facilitating monitoring of estuarine traffic and the Roman road from Chester to Wilderspool (Asset 232) probably running along the drier ground in the southeast of the 1 km Study Area.
- 11.6.15 Relatively little is known about this area in the early medieval period, although the description of Frodsham in the Domesday Book shows that it was an established, and regionally relatively important, manor prior to the Norman Conquest and it has been suggested that it developed as a pre-Conquest royal estate centre, perhaps associated with the Church of St Lawrence, Overton. The manor of Frodsham was held by the Earls of Chester and, after 1237, by the Crown, with the manor house (Asset 235) (referred to as the 'Castle') located at the western edge of the village; the village was laid out as a series of burgage plots running off Main Street, with three mills associated with streams running downslope through the village. In addition to this concentration of settlement, a focus of economic activity also emerged around Frodsham Bridge, with an informal 'port' developing as a node in various

trading networks. In contrast, the surrounding land was primarily agricultural. The estate's separation of management of demesne (i.e. Frodsham Lordship) and borough (Frodsham Township) lands is evident from the 14th century and retained into the post-medieval period; the latter primarily comprised arable open fields surrounding the village core, while Lordship lands were more extensive and included arable, meadow and pasture lands to the south and west of the town and on the marsh. Frodsham Marsh (including the Site) appears to have remained in similar use into the 20th century, undergoing a gradual process of enclosure from the late medieval period onwards.

11.6.16 The current internal landscape of the Site largely reflects this historical use, with 18th- and 19th-century historical maps demonstrating limited change to the Site over this period, but showing evident fossilisation of boundaries, access tracks and the drainage system, as well as depicting a number of individual related features, including a sluice (Asset 265), sewage outfall (Asset 270), a sheepfold (Asset 317) and a small building (possibly agricultural or a dwelling) (Asset 267). Parcels of surviving ridge and furrow earthworks (Asset 257) have been identified from historical aerial photographs, a 'Volunteer Rifle Range' (Asset 269), shown on the saltmarsh close to the MSC and River Weaver, suggests that this area was not intensively used. During WWI and WWII, land improvement projects were undertaken using labour from the Prisoner of War camps located on Frodsham Marsh; aerial photographs of the area at this time also show a number of small structures (Assets 276-282) within the Site that have been interpreted as having a military purpose.

11.6.17 In order to reclaim and improve the marsh for agricultural purposes, a series of attempts to construct flood defences were made and are documented (along with severe flooding events) from the 14th century onwards. The location of early defences are unclear, although it is possible that the post-medieval embankment, first implied on the consulted maps in 1778 and overtly depicted on maps from the 1830s, reused an earlier boundary; a section of the flood embankment shown on the 19th-century OS maps (Asset

258) appears to survive in part (though heavily modified) where the Site boundary runs alongside the Weaver channel.

11.6.18 The construction of the Manchester Ship Canal (Asset 264) in the 1880s and 1890s appears to have caused extensive ground disturbance across the northwestern edge of the Site, both within and alongside the cut itself, and a series of temporary railway lines are included on contemporary OS maps. A collection of landing stages, small buildings, a warehouse and a ferry (Asset 315) were constructed at 'Saltport', close to Marsh Farm. Also associated with the canal's construction, a series of wooden huts (Asset 268), along with a chimney and a well, were located in the western end of the Site and housed workers and their families. Once open, regular dredging of the canal was required and the resultant material was dumped in a series of 'cells' or 'tanks' (Asset 314), each surrounded by a substantial earthen bank, which now constitute the western half of the Site (to the west of Brook Furlong). A series of square brick structures (Asset 16), located in Cell 1 and Cell 2, were identified during the Site visit, that are thought to be drainage or ventilation shafts associated with the canal deposit dumps.

Baseline for Potential Setting Impacts

11.6.19 A 3 km Study Area (radius set around the Proposed Development area of the Site excluding the Main Site Access route, SPEN Grid Connection, Private Wire Connection to local businesses and the Skylark Mitigation Area)) has been utilised for the assessment of potential impacts on the setting of all designated heritage assets including World Heritage Sites, Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Registered Battlefields, and Conservation Areas.

11.6.20 A 5 km Study Area (radius set around the Proposed Development area of the Site excluding the Main Site Access route, SPEN Grid Connection, Private Wire Connection to local businesses and the Skylark Mitigation Area)) has been utilised for the assessment of potential effects on the settings of designated heritage assets of the highest significance i.e. Scheduled

Monuments, Grade I and II* Listed Buildings, Grade I and II* RPGs and Registered Battlefields.

11.6.21 The ZTVs produced for the Proposed Development **ES Vol 1 Chapter 6 [EN010153/DR/6.1], ES Vol 3 Figure 6-4a to 6-4j [EN010153/DR/6.3]** indicate that there is a low potential for any visibility beyond 5 km. All of the heritage assets considered for the potential setting impacts are included in **ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]** with their detailed setting assessment provided in **ES Vol 2 Appendix 11-5 [EN010153/DR/6.2]**. They are also summarised in **Table 11-8** below.

Table 11-8 - Designated Heritage Assets considered for potential setting impacts within 5 km of the Site

Asset Type	Asset No.	Asset Name	Notes (additional assets contained within Conservation Area boundaries)
Within 1 km (all designated assets)			
Conservation Areas	154	Frodsham (Town)	31 x Grade II Listed Buildings: Assets 38, 40-46, 48, 50-55, 57-62, 64-66, 68, 76, 87, 90, 92, 96, 97 (51 Locally Listed Buildings)
	155	Castle Park (Frodsham)	
	156	Overton St Lawrence's (Frodsham)	Note that while a small proportion of the Conservation Area extends within the 1 km Study Area, the majority of the designated area and all its Listed Buildings lie within the 1-3 km Study Area: see below).
	158	Weston Village	One Grade II* Listed Building: Asset 23 (Parish Church of St John the Evangelist) Six Grade II Listed Buildings: Assets 146 to 151
Listed Buildings - Grade II	56 71 72 78 85 86 88 145	Mill House Shippon 10 m S of Manor Farmhouse L-shaped Stable/Pillared Haybarn/Shippon 50 m SE of Manor Farmhouse Cottage and Coach/Cartshed 30 m E of Manor Farmhouse Frodsham Viaduct No. 53 Viaduct over Weaver Navigation No.54 Frodsham Bridge	

Asset Type	Asset No.	Asset Name	Notes (additional assets contained within Conservation Area boundaries)
		Remains of Rocksavage	
Registered Parks and Gardens (RPGs) - Grade II	153	Castle Park	
Between 1 km and 3 km of the Proposed Development (all designated assets)			
Scheduled Monuments	1 2 3 14 15	Promontory Fort on Helsby Hill 250 m NW of Harmers Lake Farm Hillfort on Woodhouse Hill 500 m W of Mickledale Bradley Promontory Fort Above Beechbrook 50 m S of Beechmill House Daresbury Heavy Anti-Aircraft Gun Site 400 m W of Sutton Fields Farm	
Listed Buildings - Grade I	17 20	Church of St Lawrence Sutton Hall	
Listed Buildings - Grade II*	320 27 32	The Old Vicarage The Tricorn Public House The Cottage	
Listed Buildings - Grade II	47, 69, 73-75, 77, 81-84, 89, 91, 93, 94, 98- 117	Various: range of ecclesiastical, agricultural, residential and transport buildings (post-medieval).	
Conservation Areas	156	Overton, St Lawrence's (Frodsham)	One Grade I Listed Building: Asset 17 (Church of St Lawrence) One Grade II* Listed Building: Asset 22 (The Old Vicarage) Seven Grade II Listed Buildings: Assets 39, 49, 67, 70, 79, 80, 95.
	157	Halton Village	One Scheduled Monument: Asset 6 (Halton Castle) One Grade I Listed Building: Asset 18 (Halton Castle) Four Grade II* Listed Buildings: Assets 319, 28, 29 and 31 12 x Grade II Listed Buildings: Assets 122, 123, 125, 126, 128-130, 135-138, 141
	159	Higher Runcorn	Six Grade II Listed Buildings: Assets 124, 127, 131-133, 143
	312	Overton, Five Crosses	There are no Listed Buildings within the Conservation Area.

Asset Type	Asset No.	Asset Name	Notes (additional assets contained within Conservation Area boundaries)
			'Heathdale' and 'Hallgarth' are considered important gateway properties to the conservation area approaching from south. The Methodist Church is dominant in its scale, open setting and colour of materials.
Between 3 km and 5 km of the Site (Assets of Highest Significance/Included in the Assessment)			
Scheduled Monuments	4 5 7 8 9 10 11 12 13 16 22 36	Roman Fortlet at Ince Roman Camp on Birch Hill Augustinian Abbey Known as Norton Priory Ince Manor Monastic Grange and Fishpond Middleton Moated Monastic Grange, Eight Fishponds/Connecting Channels Peel Hall Moated Site, Kingsley The Maiden's Cross, Wayside Cross Dovecote at the Site of Aston Old Hall Duck Decoy Pond 200 m SE of Marsh Bridge Moated Site, Fishpond and Connecting Channel, Elton Manor House of Abbey of St Werburgh Church of St James, Pool Lane	
Listed Buildings - Grade I	19 21	Remains of Norton Priory Church of St Peter	
Listed Buildings - Grade II*	24 25 26 30 33 34 35 37	Former Transporter Bridge Power House Runcorn Railway Bridge over R. Mersey Church of All Saints, Church Street Church of St Mary Manor House Farmhouse Alvanley Hall Farmhouse Rock Farmhouse, Ince Lane The Manor House	
Conservation Areas	313 406	Ince Conservation Area Elton Conservation Area	
There are no World Heritage Sites, Grade I or II* RPGs or Registered Battlefields within the Study Areas.			

Future Baseline

11.6.22 Without the Proposed Development the archaeological baseline would be stable and the condition of any buried remains unlikely to substantially change. It is recognised that for above ground heritage assets, there may be some decay over time in the absence of the Proposed Development as they near the natural end of their design lifespan. The setting of designated

heritage assets is also unlikely to substantially change. It is recognised that there may be other future developments that may occur within the Study Areas that could have the potential to alter the setting of assets; however, the potential impacts of any such future development cannot be predicted or assessed fully where details are not currently available. Where details of future developments are known these will be assessed as part of the cumulative baseline in the cumulative effects assessment (see Section 11.13).

Identified Receptors

Direct Impacts

11.6.23 The assets set out in **Table 11-9** (below) are potential sensitive receptors within the Site requiring further evaluation with regard to possible direct effects resulting from the Proposed Development (see Section 11.8 below). No designated assets are located within the Site.

Table 11-9 – Potential Receptors (Direct Impacts) within the Site Identified for Further Evaluation

Potential Receptor	Asset Number	Importance*	Summary Description
Section of probable post-medieval flood defence, east of Frodsham Marsh Farm.	Asset 258	Low	Low earthen bank along the northern edge of the Site; follows line of post-medieval flood bank shown on historical maps. Has been modified to form part of the current flood defences, but unclear to what degree.
Manchester Ship Canal, with former landing stages and associated structures located at 'Saltport'	Asset 264, Asset 315	Medium	Adjacent to (outside) the northwestern boundary of the Site.
Site of Frodsham Marsh Wooden Huts	Asset 268	Low	Identified from historical maps; no longer extant. Any potential remains overlain by dredged canal deposits.
Site of a former structure, possible hut or barn	Asset 267	Low	Identified from historical maps; no longer extant. Any potential remains overlain by dredged canal deposits.

Potential Receptor	Asset Number	Importance*	Summary Description
Findspot of two Bronze Age spearheads from Frodsham Marsh	Asset 226		The finds have been removed from the Site. Their presence has been taken into account where relevant, but the asset is at no risk of impacts from the Proposed Development and will not be considered further in this assessment.
Site of a Victorian rifle range	Asset 269	Low	Identified from historical maps; no longer extant. Any potential remains overlain by dredged canal deposits.
Remains of a 19th-century sewage outfall and well	Asset 270	Low	Could not be fully accessed during walkover due to density of vegetation and waterlogged ground; its location was indicated by change in vegetation and surrounding fence.
Site of a post-medieval sluice on Frodsham Marsh	Asset 265	Unknown, probably Low-Negligible	Identified from historical maps; could not be identified during Site visit due to vegetation and proximity to river channel.
Various parcels of ridge and furrow, identified from historical and modern aerial photographs	Asset 257	Low	Identified from historic aerial photographs, with some parcels visible in LiDAR data; parcels recorded to the west of Brook Furlong Lane now buried beneath dredged canal deposits. Site visit determined that, east of Brook Furlong Lane, the recorded parcels were only partially visible as surface remains and, where present, were severely denuded.
Various former structures (possibly military) identified from historical aerial photographs	Asset 276-282	Low-Negligible	Identified from historical maps and aerial photographs; no longer extant. Any potential remains overlain by dredged canal deposits.
Canal deposit dumps, disused cells 1, 2, 3 and 5	Asset 314	Negligible	Composed of imported material, up to c. 12 m thick with heavily landscaped perimeter banks.
Possible ventilation shafts	Asset 16	Negligible	Identified during walkover survey; presumed associated with use of the area for canal deposit storage.
Former post-medieval sheepfold	Asset 317	Negligible	Identified from historical maps; no longer extant.

Potential Receptor	Asset Number	Importance*	Summary Description
Former structure (possible huts or farm buildings) at Marsh Farm	Asset 318	Low-Negligible	Identified from historical maps; no longer extant.
Probable peat deposits underlying the Site	n/a	Unknown, potentially High	Have the potential to contain paleoenvironmental information or archaeological remains.
* In accordance with criteria set out in Table 11-5 .			

Setting Impacts

- 11.6.24 The ZTVs produced for the Proposed Development; including for the Solar Development Area **ES Vol 1 Chapter 6 [EN010153/DR/6.1]**, **ES Vol3 Figures 6-4a to 6-4d [EN010153/DR/6.3]**, the BESS Substation Option 1 **ES Vol 1 Chapter 6 [EN010153/DR/6.1]**, **ES Vol 3 Figure 6-4e and 6-4f [EN010153/DR/6.3]** the BESS Substation Option 2 **ES Vol 1 Chapter 6 [EN010153/DR/6.1]**, **ES Vol 3 Figure 6-4g and 6-4h [EN010153/DR/6.3]** and the proposed fencing and CCTV columns **ES Vol 1 , Chapter 6 [EN010153/DR/6.1]**, **ES Vol 3 Figure 6.4i and 6.4j [EN010153/DR/6.3]**, indicate that there is very low potential for any visibility beyond 5 km.
- 11.6.25 A review of designated heritage assets within the 3 km and 5 km Study Areas **ES Vol 3, Figures 11-3 and 11-4 [EN010153/DR/6.3]** located beyond the ZTVs was undertaken to identify any assets which may be visibly backdropped by the Proposed Development in key views toward them, such that the setting of the asset could be impacted. These assets include those considered to have a High relative sensitivity to changes in their landscape setting and, as such, have been scoped into the assessment (these assets are fully described in **ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]**, with their detailed setting assessment forming **ES Vol 2 Appendix 11-5 [EN010153/DR/6.2]**). All other assets outside the ZTVs have been scoped out but are still shown on **ES Vol 3, Figures 11-3 and 11-4 [EN010153/DR/6.3]**. Those assets outside the ZTV but scoped into the assessment are the:

- i) Promontory Fort On Helsby Hill 250 m North West Of Harmers Lake Farm (Asset 1);
- ii) Hillfort On Woodhouse Hill 500 m West of Mickledale Scheduled Monument (Asset 2);
- iii) Halton Castle Scheduled Monument (as requested by Historic England); and the
- iv) Heritage Assets within Aston Grange (as requested by Historic England).

11.6.26 The assessment also includes the following assets which are located outside the ZTV but have been scoped in to consider potential temporary effects upon their settings during the Construction Phase (these assets are fully described in **ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]**, with their detailed setting assessment forming **ES Vol 2 Appendix 11-5 [EN010153/DR/6.2]**), due to being adjacent to one of the access routes. These include the following Grade II Listed Buildings:

- i) Viaduct Over Weaver Navigation, Number 54 (Asset 86);
- ii) Boatman's Shelter On East Bank Of Weaver Navigation (Asset 112);
- iii) Marshgate Farmhouse (Asset 113); and the
- iv) Barn 20 Metres East Of Marshgate Farm (Asset 117).

11.6.27 A review of the relative sensitivity of all non-designated heritage assets within the defined Study Areas has also been undertaken. The Locally listed Buildings identified within the ZTV and within 1 km of the Site, as per Table 11-9, have been scoped into the assessment (these assets are fully described in **ES Vol 2 Appendix 11-2 [EN010153/DR/6.2]**, with their detailed setting assessment forming **ES Vol 2 Appendix 11-5 [EN010153/DR/6.2]**). Impacts upon the settings of all other non-designated assets have been scoped out of this assessment.

11.7 Incorporated Mitigation and Enhancement Measures

- 11.7.1 At the outset of the project, desk-based information on heritage assets was used to inform the design and avoid the potential for significant effects on these assets where possible, as set out in **ES Vol 3: Alternatives and Design Evolution [EN010153/DR/6.1]**, and the **Design Approach Document [EN010153/DR/5.8]**. This included the identification of features relating to the interface of the Site and the historic alignment of the River Weaver. These include the site of a sluice (Asset 265) and section of probable post-medieval flood defence, east of Frodsham Marsh Farm (Asset 258), which runs along the northern boundary of the Site (adjacent to the River Weaver) which is currently in use as a public footpath. These assets are not located within Works Area where physical ground disturbance is proposed, as such, any potential impacts upon them have been mitigated by design. Similarly, the historic field boundaries in the south of the Site, east of Brook Furlong will be retained as part of the Proposed Development allowing for continued understanding of historic patterns of land use. These field boundaries form part of the landscaping scheme as shown on ES Vol 3 Figure 2-3: Indicative Environmental Masterplan **[EN010153/DR/6.3]** and described within the **oLEMP [EN010153/DR/7.13]**. The **oCEMP [EN010153/DR/7.5]** also describes how these hedgerows would be protected during the construction phase.
- 11.7.2 The Solar Array Development would have a maximum pile depth of 5 m bgl and as such there will be no impact upon any potential buried peat deposits, which have been shown to be at depths greater than 5m bgl (**ES Vol 2 Appendix 10-1 [EN010153/DR/6.2]**).
- 11.7.3 There is no other incorporated mitigation with regard to cultural heritage and archaeology.

11.8 Assessment of Likely Impacts and Effects

11.8.1 As set out in the methodology above, the predicted level of effect on a heritage asset is determined by taking into account the asset's importance (in the case of direct impacts) and/or relative sensitivity to change to its setting, in combination with the predicted magnitude of the impact. The significance of the effect is derived from the interaction of the two factors, as set out in **Table 11-7**, and is supported by a qualitative descriptive narrative.

Construction Phase

11.8.2 The construction works for the Proposed Development are described in **ES Vol 1 Chapter 2 [EN010153/DR/6.1]**. The construction works are considered to have the potential to directly impact both known and unknown buried cultural heritage remains. This is assessed in the following sections.

Direct Impacts

11.8.3 The significance of likely direct impacts, including effects upon buried archaeological remains, within the Site is outlined in the following sections and tables. Potential impacts on known or unknown buried archaeological remains that may be present within the Site relate to the disturbance, removal, or destruction of *in situ* remains and artefacts during groundbreaking works.

Table 11-10 – Likely Direct Impacts resulting from Construction Phase

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
Section of probable post-medieval flood defence, east of Frodsham Marsh Farm (Asset 258)	Surviving elements of post-medieval flood defence bank to the east of Frodsham Marsh are in use as a public footpath. This footpath is being retained and lies outside the footprint of the Proposed Development. The projected route of the flood defence bank continues westward through areas that will contain solar	Low	None	None

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
	development. However, in these areas the bank is no longer extant and geotechnical investigations have revealed that the area is now occupied by made ground (dredging deposits) to around 9 m bgl. It is, therefore, considered unlikely that any further remains of the flood bank (beyond the extant section) still exist.			
Manchester Ship Canal, with former landing stages and associated structures located at 'Saltport' (Assets 264 and 315)	The Manchester Ship Canal lies just outside the red line boundary and beyond the Proposed Development footprint and as such, there would be no direct impact.	Medium	None	None
Site of Frodsham Marsh Wooden Huts (Asset 268)	<p>Located within NBBMA where proposed works would involve creation of scrapes, landscaping, wetland areas, grassland and islands.</p> <p>It is not anticipated that the works would exceed the depth of the overburden in this area due to the thickness of the canal dredging deposits (which geotechnical investigations have revealed to extend to c.10 m bgl in this area).</p>	Low	None	None
Site of a former structure, possible hut or barn (Asset 267)	<p>Located within area of proposed solar development.</p> <p>This part of the SADA is located within Cell 5 and thus canal dredging deposits are likely to have buried any surviving remains of the former barn structure. It is not</p>	Low	None	None

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
	anticipated that the works would exceed the depth of the overburden in this area due to the thickness of the canal dredging deposits.			
Site of a Victorian rifle range (Asset 269)	<p>Located within area of proposed solar development.</p> <p>It is not anticipated that the works would exceed the depth of the overburden in this area due to the thickness of the canal dredging deposits (geotechnical investigations have revealed extend to around 9 m bgl).</p>	Low	None	None
Remains of a 19th-century sewage outfall and well (Asset 270)	Located outside the footprint of physical development works and, as such, there would be no direct impact.	Low	None	None
Site of a post-medieval sluice on Frodsham Marsh (Asset 265)	Located outside the footprint of the physical development works and, as such, there would be no direct impact.	Unknown (probably Low-Negligible)	None	None
Various parcels of ridge and furrow, identified from historical and modern aerial photographs (Asset 257)	<p>Located within area of proposed solar development and the proposed Option 1 or Option 2 substation.</p> <p>Do not appear to be well preserved as earthwork features but subsurface remains may survive.</p> <p>There would be no impact on areas west of Brook Furlong as these areas are located beneath canal dredging and are buried at depths greater than the depths of proposed piles.</p> <p>Within the solar array areas, east of Brook Furlong it is considered</p>	Low	Low	Negligible

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
	that the piling and internal cabling could result in a low impact upon any surviving ridge and furrow remains (low as the impacts would be localised and have a small footprint compared to the overall area of the ridge and furrow).			
Various former structures (possibly military) identified from historical aerial photographs (Assets 276 to 282)	<p>Assets 276, 277 and 278 are located within the NBBMA , but in an area that will not undergo any further landscaping and, there are no direct impacts predicted upon them.</p> <p>Assets 279 to 282 are located within the NBBMA and appear to be within the extent of existing ponds that may be reengineered.</p> <p>It is not anticipated that any of the works would exceed the depth of the overburden in this area due to the thickness of the canal dredging deposits (which geotechnical investigations have revealed to extend to c.10 m bgl in this area).</p> <p>As these assets do not appear to be extant no further direct impacts are predicted upon them.</p>	Low-Negligible (dependant on surviving condition)	None	None
Canal deposit dumps, disused cells 1, 2, 3 and 5 (Asset 314)	<p>Located within area of proposed solar development.</p> <p>Cells 1, 2, 3 and 5 are no longer active and are bounded by substantial earthen banks with level ground grassland/scrub) across the interior; the</p>	Negligible	Low	Negligible

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
	surface is some 5 m above the surrounding ground level. The surface of the cells would be impacted as panels would be placed upon it. However, the overall form of the cells would remain intact.			
Possible ventilation shafts (Asset 16)	<p>Located within area of proposed solar development.</p> <p>These ventilation shafts would potentially be removed by the construction of solar panels across their extent. As discussed below it may be possible to retain some of these structures, but for the purposes of the assessment it is assumed as a worst case that these will be lost.</p>	Negligible	High	Minor
Former post-medieval sheepfold (Asset 317)	Located outside the footprint of physical development works and, as such, there would be no direct impact.	Negligible	None	None
Former structure (possible huts or farm buildings) at Marsh Farm (Asset 318)	Located outside the footprint of physical development works and, as such, there would be no direct impact.	Low-Negligible	None	None
Probable peat deposits underlying the Site	<p>Within the northern and western part of the SADA and the NBBMA (within the former canal dredge infill cells) works would exceed the depth of the overburden in this area due to the thickness of the canal dredging deposits (geotechnical investigations have revealed they extend to around 9 m bgl).</p> <p>Within the southern, central and eastern parts of the SADA additional</p>	Unknown, potentially High	None	None

Potential Receptor	Description of Impact	Importance of Asset*	Magnitude of Impact	Predicted Significance of Effect
	<p>geotechnical investigations were undertaken to depths of c.5 m, but no peat deposits were recorded. The solar array development would not impact upon any peat deposits owing to the maximum pile depth of 5 m bgl.</p> <p>The Private Wire Connection (132 kv underground line) to local businesses, would follow the Main Site Access route to the southwest, and thus would not impact upon buried peat deposits which have been identified at depths between 7 m and 9.5 m bgl.</p> <p>It is anticipated there is a peat horizon buried beneath most the Site but, the Proposed Development foundations would not be deep enough to directly impact upon it. The existence and depth of this peat horizon is still unknown in the central, southern and eastern parts of the Site but, where investigated, it was not within 5 m of the current ground surface.</p>			
* In accordance with criteria set out in Table 11-4 .				

11.8.4 In summary, the Proposed Development is not predicted to directly impact upon most of the identified heritage assets within its extent due to the assets being no longer extant, sealed beneath thick overburden that resulted from the deposit of canal dredgings or located outside the footprint of the Proposed Development.

- 11.8.5 **Minor adverse** effects are predicted upon the possible ventilation shafts (Asset 16) as these assets would potentially be removed/destroyed by the construction works. It should be noted that the assessment has taken a worst-case approach assuming that all of these ventilation shafts would be lost. However, several of the shafts are located within Work No. 6a where physical development of panels and other infrastructure is not permitted. It is therefore entirely possible some of the ventilation shafts would be retained, this is discussed further in the Additional Mitigation section. Based on the worst-case assessment of total loss, the level of effect on the ventilation shafts is **not significant** in EIA terms because this constitutes a high magnitude of impact on an asset of negligible cultural value and importance. The level of harm would assuming worst-case, would be total loss, , of a non-designated asset. However, as set out above it is entirely possible that some of the ventilation shafts will be retained. Mitigation for the potential harm to these non-designated assets is described in the Additional Mitigation section. .
- 11.8.6 A potential **negligible adverse** effect has been predicted upon the sub surface remains of former ridge and furrow cultivation (Asset 257) east of Brook Furlong. The piling and internal cabling required for the solar array would have a low magnitude of impact as the impact would be localised and have a small footprint compared to the overall area of the ridge and furrow. The identified level of effect is **not significant** in EIA terms as this constitutes a low magnitude of impact on an asset of low cultural value and importance. The level of harm on this non-designated asset is considered to be low..
- 11.8.7 A potential **negligible adverse** effect has been predicted upon cells 1, 2, 3 and 5 which store material dredged from the Manchester Ship Canal. The cells are no longer active and are bounded by substantial earthen banks which will be retained. However, the interior cell deposits will change from grassland use to solar energy generation and this would constitute a low magnitude of impact on an asset of negligible cultural value. The level of harm on this non-designated asset is considered to be low.

Indirect Effects: Archaeological Remains

The Proposed Development would not result in any indirect effects on known heritage assets within the Site. The potential for indirect effects upon hitherto unknown buried archaeological remains is considered to be limited to the potential effects of any changes to the ground conditions which could affect the preservation of any buried peats and preserved organic deposits. As noted above (see Table 11-8), the identified peat horizon within the Site is anticipated to be deeper than the Proposed Development's foundations and as such the Proposed Development is not anticipated to effect the potential for survival of hitherto unknown archaeological remains beyond the Proposed Development footprint. The level of harm on this non-designated asset is considered to be none to low. Impacts upon Setting

11.8.8 There is also some potential for temporary effects upon the setting of designated heritage assets in the vicinity of the Site during the construction phase in the form of increased traffic, noise and visual impacts. Full consideration of the potential for these impacts is set out in **ES Vol 2 Appendix 11-5 [EN010153/DR/6.2]**, with the results of the assessment summarised below.

11.8.9 This assessment has found that there would be **no** or **neutral effects** upon the settings of designated heritage assets during the Construction Phase.

No Effects

11.8.10 For most of the designated heritage assets considered in the assessment **no effects** upon their settings during the Construction Phase have been predicted (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**). This is typically due to the fact that the construction traffic would not pass by in the immediate vicinity of the assets and that, largely due to intervening distance and other busy roads, there would not be any potential for noise or visual impacts such that the ability to understand, appreciate or experience

the contribution that the asset's setting makes to its overall cultural value would be diminished.

11.8.11 Where this assessment has predicted **no effects** upon the settings of heritage assets during the Construction Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**), there would be no harm. There is, therefore, no mitigation required.

Neutral Effects

11.8.12 **Temporary neutral effects** have been predicted upon the settings of the following assets during the Construction Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**):

- i) Frodsham Conservation Area (Asset 154) including some of the Grade II Listed Buildings (Assets 38, 40, 42, 43-45, 48, 53, 59, 62, 92) and Locally Listed Buildings (Assets 160, 162, 165, 167-168, 173, 176-178, 181, 184, 189, 193, 198, 199, 200, 202, 204, 213, 217-219 and 221) within its extent;
- ii) The Grade II Listed Cottage and Coach/Cartshed 30 Metres East Of Manor Farmhouse (Asset 78) and Locally Listed 1 and 1A Bridge Lane (Asset 187) and 78 High Street (Asset 191), located to the east of Frodsham Conservation Area;
- iii) The Locally Listed Marsh Green Cottages, Marsh Lane (Asset 180), located to the west of Frodsham Conservation Area;
- iv) The Castle Park (Frodsham) Conservation Area (Asset 155) and Grade II Listed Registered Park and Garden (Asset 153);
- v) Overton, St Lawrence's (Frodsham) Conservation Area (Asset 156);
- vi) Overton, Five Crosses (Frodsham) Conservation Area (Asset 312);
- vii) The Grade II Listed War Memorial (Asset 93);
- viii) Ince Conservation Area (Asset 313) including Ince Manor Monastic Grange and Fishpond Scheduled Monument (Asset 8), the Grade I Listed Manor House Of Abbey Of St Werburgh Chester, Including Old Hall And Monastery Cottages (Asset 22) and the Grade I Listed Church of St James, Pool Lane (Asset 36);

- ix) The Grade II Listed Manchester Ship Canal Magazine Building, Ince Banks (Asset 111); and the
- x) Weston Conservation Area (Asset 158) including the Grade II* Listed Parish Church of St John the Evangelist (Asset 23) and other Grade II Listed Buildings (Assets 148 to 151) within its extent.

11.8.13 Where this assessment has predicted **temporary neutral effects (neither adverse or beneficial)** upon the settings of heritage assets during the Construction Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**) it is acknowledged that the construction works may introduce a temporary change (via traffic, visual or noise impact) that, although noticeable, would not materially affect any elements of these assets' settings which are considered to make a contribution to their cultural value. These levels of effect are **not significant** in EIA terms and will not result in harm. There is, therefore, no mitigation recommended in relation to these temporary levels of effect.

Operational Phase

Direct Effects: Archaeological Remains

11.8.14 As described in **ES Vol 1 Chapter 2: Proposed Development [EN010153/DR/6.1]**, once operational, the Proposed Development would not require any below ground works beyond occasional maintenance of the solar panels and other infrastructure within the previously impacted footprint. Therefore, no additional direct impacts are predicted.

Impacts on setting

11.8.15 This assessment has found that there would be **no, neutral or minor adverse effects** upon the settings of designated heritage assets during the Operational Phase.

No Effects

11.8.16 For a large proportion of the designated heritage assets considered in this assessment **no effects** upon their settings during the Operational Phase have been predicted (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**). This is typically due to the fact that there would be no or extremely limited intervisibility with the Proposed Development. Where limited visibility has been identified it has been assessed, in each case, that the identified partial distant views would not affect any viewers ability to understand, appreciate or experience the contribution that the asset's setting makes to its overall cultural value.

11.8.17 Where this assessment has predicted **no effects** upon the settings of heritage assets during the Operational Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**), there would be no harm. There is, therefore, no mitigation required with regard to these effects.

Neutral Effects

11.8.18 **Neutral effects** have been predicted upon the settings of the following assets during the Operational Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**):

- i) Grade II Listed Buildings within Frodsham Conservation Area (Assets 38, 40, 42, 43-45, 48, 53, 59, 62, 92);
- ii) Locally Listed Buildings within Frodsham Conservation Area (Assets 160, 162, 165, 167-168, 173, 176-178, 181, 184, 189, 193, 198, 199, 200, 202, 204, 213, 217-219 and 221);
- iii) The Grade II Listed Cottage and Coach/Cartshed 30 Metres East Of Manor Farmhouse (Asset 78) and Locally Listed 1 and 1A Bridge Lane (Asset 187) and 78 High Street (Asset 191), located to the east of Frodsham Conservation Area;
- iv) The Locally Listed Marsh Green Cottages, Marsh Lane (Asset 180), located to the west of Frodsham Conservation Area;

- v) The Grade II Listed Rock Cottage and Rock Farm Farmhouse (Asset 47) and Locally Listed Netherton Farm (Asset 174) and Hatley Farm (Asset 201), located to the southwest of Castle Park (Frodsham) Conservation Area;
- vi) The Grade I Listed Church of St Lawrence (Asset 17), in Frodsham Overton;
- vii) The Hillfort on Woodhouse Hill 500 m West of Mickledale Scheduled Monument (Asset 2);
- viii) The Grade II Listed Church of St Paul (Asset 105), in Helsby;
- ix) Ince Conservation Area (Asset 313) including the Ince Manor Monastic Grange and Fishpond Scheduled Monument (Asset 8), the Grade I Listed Manor House Of Abbey Of St Werburgh Chester, Including Old Hall And Monastery Cottages (Asset 22) and the Grade I Listed Church of St James, Pool Lane (Asset 36);
- x) The Grade II Listed Manchester Ship Canal Magazine Building, Ince Banks (Asset 111);
- xi) The Duck Decoy Pond 200 m South East Of Marsh Bridge Scheduled Monument (Asset 13);
- xii) The Grade II Listed Hale Head Lighthouse (Asset 152);
- xiii) The Grade II Listed Christ Church And Churchyard Railings at Weston Point (Asset 142);
- xiv) Weston Conservation Area (Asset 158) including the Grade II* Listed Parish Church of St John the Evangelist (Asset 23) and other Grade II Listed Buildings (Assets 148 to 151) within its extent;
- xv) The Grade II Listed Remains Of Rock Savage (Asset 145);
- xvi) The Heavy Anti-Aircraft Gunsite, 400 m West Of Sutton Fields Farm Scheduled Monument (Asset 15);
- xvii) Grade I Listed Sutton Hall (Asset 20); and the
- xviii) Overton Five Crosses (Frodsham) Conservation Area (Asset 319)

11.8.19 Where this assessment has predicted **neutral effects (neither adverse or beneficial)** upon the settings of heritage assets during the Operational Phase

(see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**) it is acknowledged that although elements of the Proposed Development may be intervisible, or appear in wider views containing heritage assets, that these visual intrusions would be very limited and not materially affect any elements of these assets settings which are considered to make a contribution to their cultural value. These levels of effect are **not significant** in EIA terms and will not result in harm. There is, therefore, no mitigation recommended in relation to these levels of effect.

Minor Effects

11.8.20 **Minor adverse effects** have been predicted upon the settings of the following assets during the Operational Phase (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**):

- i) The Promontory Fort On Helsby Hill 250 m North West Of Harmers Lake Farm Scheduled Monument (Asset 1);
- ii) The Grade II Listed War Memorial (Asset 93);
- iii) Frodsham Conservation Area (Asset 154);
- iv) Castle Park (Frodsham) Conservation Area (Asset 155) and the Castle Park Grade II Listed Registered Park and Garden (Asset 153); and the
- v) Overton, St Lawrence's (Frodsham) Conservation Area (Asset 156).

11.8.21 The setting assessments undertaken for each of these assets are provided in **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]** and replicated here.

The Promontory Fort On Helsby Hill 250 m North West of Harmers Lake Farm Scheduled Monument (Asset 1)

11.8.22 The visit to the Scheduled Monument confirmed that there are clear views out from the fort across the Mersey Estuary to the northwest, north and northeast (**ES Vol 2 Appendix 11-4, Plate 58 [EN010153/DR/6.2]** and LVIA Viewpoint 13 [**ES Volume 3 Figure 6-18 [EN010153/DR/6.3]**]). The ridge upon which Helsby Hill fort is set (although not the fort itself) can also be clearly identified

from within the Site. It is, therefore, considered inevitable that the Proposed Development would be included within views to and from the promontory fort.

11.8.23 Promontory Forts are, by definition, constructed on naturally defensible sites, usually prominent hilltop locations, for defensive and/or display purposes. Their siting and the views that they command were a practical consideration of the people that constructed them and, as such, they derive some of their cultural value from their wider landscape setting.

11.8.24 The fort on Helsby Hill is described thus: *“Despite having been ploughed over, the fort on Helsby Hill survives reasonably well and the ploughsoil will mask significant buried remains”*^{1xxviii}. The Listing description goes on to note that previous investigation of the ramparts in 1955 revealed some details of their construction and that there *“are no visible traces of settlement in the interior of the fort, although extensive remains will survive beneath the present ground surface”*^{1xxix}. The Listing description does not make any mention of views from the fort, or their significance, instead concentrating in the main on the evidential value of the upstanding earthwork and potential for buried archaeological remains. It is, therefore, considered that much of the promontory fort’s importance is derived from this potential evidential value. It is clear, however, that the fort was constructed to provide commanding views over and up to the Mersey Estuary (views in other directions are also possible, but the estuarine views are the clearest and most relevant to this assessment). It is, however, no longer clearly discernible as a human made feature (the Scheduled Monument is set atop a flat-topped hill whose sandstone cliff face does not appear to be anything other than a natural geological feature). Overall, therefore, it is considered that the promontory fort, although of high importance, has a medium relative sensitivity to changes in its setting.

11.8.25 The Proposed Development would represent a change within the existing largely green space of the marshes to the north of Frodsham. It is noted, however, that this space is currently occupied by two areas of wind turbines

with other industrial and electrical infrastructure prominent in views towards the Site from the promontory fort. It is also noted that views from this fort will have changed significantly over time with the development of the residential, industrial and commercial areas around Frodsham and Runcorn being an evolving fact of the fort's wider setting for centuries. The Proposed Development would feature in, but would not prevent the views over and up to, the Mersey Estuary which the fort was sited to exploit. This element of its setting would thus remain fully appreciable and understandable.

- 11.8.26 Views towards the fort from land within the Site are currently possible, however it has been established that the fort is not legible as a monument from any distance and views towards it from within the Site are of the ridge upon which it sits rather than the fort itself and have not been identified as making a specific contribution to its cultural value.
- 11.8.27 On balance, it is assessed that the addition of the Proposed Development into the views to and from the fort would not have a significant effect on an observer's ability to understand, appreciate or experience the contribution that the promontory fort's setting (which would still have commanding views up to and across the Mersey Estuary) makes to its overall cultural value and the magnitude of impact is judged to be low.
- 11.8.28 Given the medium sensitivity to change and the predicted low magnitude impact the overall level of effect is assessed as being **minor adverse**, which is **not significant** in EIA terms. This level of impact would cause '*less than substantial*' harm to the heritage asset. The assessed level of '*less than substantial harm*' is considered to be at the lower end of the scale in this case. Given the elevated nature of the asset in relation to the Proposed Development it is not considered that there is any potential to mitigate this effect by changes to the Proposed Development design or by implementing design mitigation screening measures.

The Grade II Listed War Memorial (Asset 93)

- 11.8.29 The visit to the War Memorial confirmed that it is set on a flat hill which overlooks Frodsham to the north with clear views out and across the Mersey Estuary (**ES Vol 2 Appendix 11-4, Plates 55 and 56 [EN010153/DR/6.2]** and LVIA Viewpoint 9 (**ES Vol 3 Figure 6-14 [EN010153/DR/6.3]**). It is, therefore, considered inevitable that the Proposed Development would be included within views from the War Memorial.
- 11.8.30 The 11-metre tall War Memorial was erected in 1919 within land given to the people of Frodsham by local landowners to commemorate those who fell in World War I. It was deliberately sited on a prominent hilltop (Overton Hill) to be a landmark feature of remembrance for those from the Frodsham Area. The War Memorial is located within a public space with a designed approach route from a gated entrance to the south. This approach route is lined by mature trees and vegetation on either side, narrowing the view towards the memorial on approach before the wider vista of Frodsham and the wider Mersey Estuary is revealed as the memorial is reached. The memorial's direct association with people of Frodsham is clear to any observer from this vantage point.
- 11.8.31 The War Memorial is, therefore, considered to have a high sensitivity to changes to its wider setting as it was designed to be visible landmark in the wider area and that historic association with the township of Frodsham (which can be appreciated both from various points within the town and from the memorial itself) is considered to make a significant contribution to the Listed Building's importance.
- 11.8.32 The Proposed Development would represent a change within the existing largely green space of the 'marshes' to the north of Frodsham. It is noted, however, that this space is currently occupied by two areas of wind turbines with other industrial and electrical infrastructure prominent in views towards the Site from the War Memorial, along with the M56 and the railway line which serves Frodsham. It is also important to note that no element of the Proposed

Development would compete with the War Memorial as a landmark feature due to its high elevation above the Mersey Estuary. It is also considered unlikely that the Proposed Development would affect the ability to understand, appreciate or experience the contribution that the War Memorial's setting (i.e. its association with the people and township of Frodsham) makes to its overall cultural value and the magnitude of impact is therefore judged to be low.

- 11.8.33 Given the high sensitivity of the War Memorial to change and the predicted low magnitude impact, the overall level of effect is assessed as being **minor adverse**, which is **not significant** in EIA terms. This level of impact would, however, cause '*less than substantial*' harm to the heritage asset. The assessed level of '*less than substantial harm*' is considered to be at the lower end of the scale in this case. Given the elevated nature of the asset in relation to the Proposed Development it is not considered that there is any potential to mitigate this effect by changes to the Proposed Development design or by implementing design mitigation screening measures.

Frodsham Conservation Area (Asset 154)

- 11.8.34 The visit to the Frodsham Conservation Area confirmed that most of the Listed Buildings and Locally Listed Buildings recorded within its extent are situated along the Main Street and High Street, which runs on a broadly northeast to southwest alignment through the Conservation Area (**ES Vol 2 Appendix 11-4, Plates 41 and 42 [EN010153/DR/6.2]**). It is assessed that the elements of setting of these buildings that contribute to their cultural value are derived from their immediate streetscape (the line of Main Street and High Street) and the inter-relationships that they have with other designated assets along the roads. The footpath in the northeastern part of the Conservation Area along the southern side of the High Street is elevated from the road level and allows for clearer views of the existing wind farm within the Site (**ES Vol 2 Appendix 11-4, Plates 42 and 45 [EN010153/DR/6.2]**). From elsewhere within the Conservation Area, views into the Site were found to be limited to occasional glimpses between buildings of the upper part of wind turbines (**ES Vol 2**

Appendix 11-4, Plates 43 and 44, [EN010153/DR/6.2]), with glimpses of the ground surface of the marshes forming part of the Site limited to the higher, northeastern part of the Conservation Area (**ES Vol 2 Appendix 11-4, Plate 46, [EN010153/DR/6.2]**). Overall, the Conservation Area is judged to be of medium sensitivity to changes beyond its boundaries.

- 11.8.35 The Frodsham Conservation Area Appraisal notes that key views within and out of the Conservation Area include from its highest point in the northeast with the gentle curve of the High Street noted to link to the busy Main Street with the silhouette of the Helsby Hill escarpment beyond^{lxxx}. There are currently wind turbines within the periphery of this view (**ES Vol 2 Appendix 11-4, Plates 42 and 45, [EN010153/DR/6.2]**), and it is assessed that the larger elements of the Proposed Development (i.e. the Option 1 or Option 2 BESS and Frodsham Solar Substation) may also be introduced into the periphery of this key view (but likely only visible from limited locations on approach from the northeast).
- 11.8.36 The Conservation Area Appraisal also notes that the reverse view, north eastward along the Main Street and curving to the High Street is also important but more related to the rising skyline which sweeps to the right from that perspective^{lxxxi} (and would not include any elements of the Proposed Development).
- 11.8.37 The Conservation Area Appraisal also notes that there are occasional views to the Mersey Estuary from the higher land in the eastern part of the Conservation Area. These views feature distant pylons, traffic movement on the M56 and industrial buildings adjacent associated with the chemical works at Runcorn^{lxxxii} (see **ES Vol 2 Appendix 11-4, Plate 46, [EN010153/DR/6.2]**). The Proposed Development would introduce glimpses of elements of the solar arrays into this view thus changing the view from one featuring open marshland and tall vertical infrastructure adjacent to the Mersey Estuary to a solar development featuring elements of tall infrastructure.

11.8.38 Overall it is considered that glimpses of the Proposed Development (specifically elements of the solar arrays in the northeastern part of the Site and the Option 1 or Option 2 BESS and Frodsham Solar Substation) may be possible from discrete locations within the Conservation Area (as indicated by the ZTV) which would most likely include views from the higher ground in the northeastern part of the Conservation Area and from upper floor windows of the Listed and Locally Listed Buildings within its extent (which could not be assessed directly). As is noted above (Paragraph 11.8.19) a Neutral effect upon the settings of some of the Listed (Assets 38, 40, 42, 43-45, 48, 53, 59, 62, 92) and Locally Listed Buildings within Frodsham Conservation Area (Assets 160, 162, 165, 167-168, 173, 176-178, 181, 184, 189, 193, 198, 199, 200, 202, 204, 213, 217-219 and 221) is predicted (see **ES Vol 2 Appendix 11-5, Table 1.0, [EN010153/DR/6.2]**).

11.8.39 The Proposed Development would thus result in a change to some views which are considered to contribute to the character of the Conservation Area. However, it is important to recognise that this change would be seen within the context of existing modern development and that the appraisal also notes that the introduction of the M56 to the northwest of the historic core of the town has “*now effectively physically and visually isolated from original landscape setting by transport infrastructure*”^{xxxiii}.

11.8.40 The Proposed Development is not anticipated to have any effect upon the streetscapes of the High Street and Main Street, nor would it have any effect on many of the factors that are listed as contributing to the character to the Conservation Area (building materials, architectural features etc.). On balance, therefore, and given that the Proposed Development would be introduced into an area already containing wind turbines (which are much larger than any of the Proposed Development elements) it is considered that there would be a low magnitude of impact upon the character of the Conservation Area during the Operational Phase.

11.8.41 Given the medium sensitivity to change and the predicted low magnitude impact the overall level of effect is assessed as being **minor adverse**, which is **not significant** in EIA terms. This level of impact would, however, cause *'less than substantial'* harm to the Conservation Area. The assessed level of *'less than substantial harm'* is considered to be at the lower end of the scale in this case. It is not considered that there is any potential to mitigate these effects, beyond the screening measures included within the Proposed Development design.

Castle Park (Frodsham) Conservation Area (Asset 155) and the Castle Park Grade II Listed Registered Park and Garden (Asset 153)

11.8.42 Visits to the Castle Park Conservation Area and Registered Park and Garden revealed that the area is well screened from views inwards and outwards by mature vegetation along its northern, eastern and southern edges (and by a belt of trees within its centre) with its western and northwestern edge being less screened and opening out to views of housing development within Frodsham (**ES Vol 2 Appendix 11-4, Plate 48, [EN010153/DR/6.2]**).

11.8.43 The Conservation Area Appraisal document for Castle Park (Frodsham) Conservation Area mostly notes internal features and vistas as contributing to the character of the Conservation Area (none of which would be impacted by the Proposed Development) but does note that from the open grassland sports-field in the south of the park there are wider panoramic views possible that include *"clear views of the Mersey estuary and South Merseyside to the North through more prominent gaps in the vegetation cover^{lxxxiv}"*.

11.8.44 The area was visited during July so the vegetation cover noted above was at its maximum and, therefore, during winter months, there would be clearer views of the Site to the north although the density of vegetation in the north of the park would still limit views in this direction. The Conservation Appraisal also notes that the landscape setting of the Park is related to the *"earliest formal settlement in area"* which was slightly 'elevated above open marshes

of Mersey estuary^{lxxxv}. Overall, the Conservation Area and RPG are judged to be of medium sensitivity to changes beyond their boundaries.

11.8.45 Glimpses of the Proposed Development (specifically elements of the solar arrays in the western part of the Site (to the west of Brook Furlong) and the Option 1 or Option 2 BESS and Frodsham Solar Substation) may be possible from discrete locations within the Conservation Area (as indicated by the ZTV) which would most likely include views from the higher ground in the southern part of the Conservation Area and RPG.

11.8.46 Some of these glimpses would be introduced into views which are considered to contribute to the character of the Conservation Area; but would be located beyond the M56 which the Conservation Area Appraisal notes as having a persistent negative effect in the form of *“continual background noise... particularly noticeable in peaceful setting of Castle Park”*^{lxxxvi}.

11.8.47 Overall, however, the Proposed Development would not be anticipated to have any effect upon the internal key views and vistas within the park nor would it have any effect on the majority of factors that are listed as contributing to the character to the Conservation Area (park features, vegetation, historical associations etc.) or the setting of the RPG.

11.8.48 On balance, therefore, and given that the Proposed Development would be introduced into an area already containing wind turbines (which are much larger than any of the Proposed Development elements) it is considered that there would be a low magnitude of impact upon the character of the Conservation Area and setting of the RPG during the Operational Phase.

11.8.49 Given the medium sensitivity to change and the predicted low magnitude impact the overall level of effect is assessed, in each case, as being **minor adverse**, which is **not significant** in EIA terms. This level of impact would cause *‘less than substantial’* harm to the Conservation Area and RPG. The assessed level of *‘less than substantial harm’* is considered to be at the lower end of the scale in this case. It is not considered that there is any potential to

mitigate these effects beyond the general screening included within the design.

Overton, St Lawrence's (Frodsham) Conservation Area (Asset 156)

11.8.50 A visit to the Overton, St Lawrence's (Frodsham) Conservation Area confirmed that open areas in the northwestern part of the Conservation Area (to the northwest of the Church) enjoy views out across the Mersey Estuary (**ES Vol 2 Appendix 11-4, Plate 51 [EN010153/DR/6.2]** and Viewpoints 6 and 26 **ES Volume 3 Figure 6-11 and 6-31 [EN010153/DR/6.3]** respectively), whilst from the more built up areas of the Conservation Area (including from the church yard, along Church Road, Bellemonte Road and School Lane), where the Listed Buildings are situated, the potential views of the Site are much more obscured (**ES Vol 2 Appendix 11-4, Plates 52 to 54, [EN010153/DR/6.2]**).

11.8.51 The Overton, St Lawrence's (Frodsham) Conservation Area Appraisal notes that key views within the Conservation Area “*are short and terminated quickly due to the sweeping nature of the highways*”^{lxxxvii}. It also notes that several open panoramic views from out of the area from “*Churchfields*” and “*St. Lawrence’s Church car park and churchyard*” contribute to the overall character of the area. These include “*clear views of Mersey Estuary and south Merseyside to the northwest*”, “*clear views north, over Frodsham below, towards industrial clutter of distant pylons, smoking oil refinery stacks and chemical works*” and “*clear views northeast, over Frodsham and the distant motorway below, to Runcorn*”^{lxxxviii}. The appraisal goes on to note that the Conservation Area is “*located on elevated land south of the confluence of the River Weaver with the Mersey Estuary*” and that “*the views across the Mersey Estuary enable a wider local setting to be established*”^{lxxxix}. Overall, therefore, Conservation Area is judged to be of medium sensitivity to changes beyond its boundary.

11.8.52 It is considered inevitable that large elements of the Proposed Development would appear within the panoramic views that are considered to make a

contribution to the overall character of the Conservation Area as part of its wider landscape setting.

11.8.53 Although the Proposed Development would be visible from the northwestern part of the Conservation Area it is noted that it would be added to an area that already contains wind turbines (which are much taller than the Proposed Development) with the busy M56 in its foreground. It is assessed that the Proposed Development would not interfere in any views between the Conservation Area and the Mersey Estuary to the extent that the broader historic landscape associations could not still be clearly understood. The Proposed Development is also not anticipated to have any effect upon the streetscapes along Church Road, Bellemonte Road and School Lane (where the Listed Buildings are situated) nor would it have any effect on the majority of the factors that are listed as contributing to the character to the Conservation Area (building materials, architectural features etc.). On balance, therefore, it is considered that there would be a low magnitude of impact upon the character of the Conservation Area during the Operational Phase.

11.8.54 Given the medium sensitivity to change and the predicted low magnitude impact the overall level of effect is assessed as being **minor adverse**, which is **not significant** in EIA terms. This level of impact would, however, cause '*less than substantial*' harm to the Conservation Area. The assessed level of '*less than substantial harm*' is considered to be at the lower end of the scale in this case. It is not considered that there is any potential to mitigate these effects beyond that included within the design.

Decommissioning Phase

11.8.55 The Proposed Development would be decommissioned at the end of the operational phase. At this time, all solar panels, inverters and transformers, mounting structures, fencing, and associated infrastructure including the Option 1 or Option 2 BESS and Frodsham Solar Substation would be removed from Site.

- 11.8.56 Any future maintenance, decommissioning works or reinstatement works would be subject to prevailing legislation, guidance and permitting regimes. These measures are detailed in the **oDEMP [EN010153/DR/7.7]**. This outline plan will be developed into a detailed plan which must be in substantial accordance with the outline and the Proposed Development must be decommissioned in accordance with that detailed plan. This is secured via a Requirement in Schedule 2 of the draft DCO.
- 11.8.57 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Proposed Development. It is not, therefore, anticipated that decommissioning works would cause direct impacts upon any buried archaeological remains, deposits or features beyond the existing footprint of the Proposed Development.
- 11.8.58 It is assumed that all elements of the Proposed Development infrastructure would be removed during decommissioning using similar extents and methods to those used during their construction and that, therefore, any buried remains already removed during construction will not experience any further impacts.
- 11.8.59 It is considered that there is a potential for temporary effects upon the settings of heritage assets during the decommissioning phase, but it is not anticipated that these would cause a level of effect higher than those reported in this Chapter for construction and operation phases of the Proposed Development. Any decommissioning effects would be temporary and likely of a shorter duration than the assessed Construction effects.
- 11.8.60 Upon the completion of the decommissioning the long-term effects of the Operation Phase on the setting of assets would be removed, with the setting of those assets restored to the current baseline condition with the exception of the elements of new green infrastructure (including the NBBMA) which would be left in place at the point of decommissioning.

11.9 Additional Mitigation, Enhancement and Monitoring

Additional Mitigation and Enhancement

- 11.9.1 A programme of geoarchaeological investigation in the form of a purposive borehole survey would be undertaken within the southern, central and southeastern parts of the Site (outside the areas of previous canal dredging deposition) in order to ascertain the depth of preservation of any buried peat and organic deposits. This will allow for the identification and sampling of deposits which have the potential to preserve paleoenvironmental proxies and thus allow for investigation of past environmental conditions and provide opportunities for scientific dating. The completion of this investigation would allow for an enhancement of the current levels of knowledge regarding the survival and composition of the peat deposits across the Helsby Marshes. The exact scope of the geoarchaeological investigation would be agreed through consultation with the CAPAS and HE and secured through an appropriately worded Written Scheme of Investigation (WSI) which would be required to be developed pursuant to DCO Requirement.
- 11.9.2 An additional programme of archaeological investigation would be undertaken within the land east of Brook Furlong in the form of archaeological trenches in order to ascertain the level of preservation of the ridge and furrow (Asset 257) recorded across the area, and to investigate whether that ridge and furrow could be obscuring any earlier archaeological features. The completion of this investigation would allow for the archaeological potential within areas of potential impact to be assessed further and for any encountered remains to be investigated and recorded and for the requirements for any further stages of mitigation to be determined. On completion of any works, the potential impacts upon any archaeological remains identified would be mitigated via their recording and addition to the archaeological record. The exact scope of any archaeological investigation would be agreed by consultation with the CAPAS and secured through an appropriately worded

Written Scheme of Investigation (WSI) which would be required to be developed pursuant to DCO Requirement.

- 11.9.3 Ventilation shafts (Asset 16) which would be destroyed or damaged during construction would be subject to a programme of recording (likely a photographic survey) prior to their demolition (this assessment has taken a worst-case approach assuming that all of these ventilation shafts would be lost). This would allow for the partial mitigation of their demolition via preservation by record. The **oCEMP [EN010153/DR/7.5]** includes measures to provide for the retention of any ventilation shafts which do not need to be lost or damaged to facilitate the construction and operation of the Proposed Development. Any shafts which are not impacted by the solar array would be retained and fenced during construction to avoid damage. As set out in the **oOEMP [EN010153/DR/7.6]** retained ventilation shafts which are at risk of damage from routing operational maintenance works would be permanently fenced. The exact scope of any recording would be agreed by consultation with the CAPAS and secured through an appropriately worded Written Scheme of Investigation (WSI). This is secured via a Requirement in Schedule 2 of the draft DCO.

11.10 Residual Effects

Direct and Indirect Effects

11.10.1 It is assessed that the completion of any agreed archaeological mitigation works would result in direct impacts upon buried archaeological remains being mitigated via programmes of archaeological investigation. This would allow any remains that were to be destroyed to be 'preserved by record' and for an enhancement of the current levels of knowledge regarding the survival and composition of the peat deposits across the Helsby Marshes.

11.10.2 The level of residual direct and indirect effects upon buried heritage assets would depend upon the mitigation employed following the initial archaeological investigations outlined above. Where avoidance of impacts is not possible, the residual levels of effect would be unchanged from the Construction levels assessed above although excavation and recording of the assets would ensure that impacts are offset by ensuring preservation by record.

Construction Phase – Setting Effects

11.10.3 The identified temporary effects upon the setting of designated heritage assets in the vicinity of the Site during the construction phase would not continue beyond the completion of the construction phase.

Operational Phase – Setting Effects

11.10.4 The assessed levels of residual effects from the Operational Phase upon heritage assets are predominantly related to the potential visual impact of the completed Proposed Development. Although it is acknowledged that there may also be noise and traffic (for maintenance etc.) impacts during the Operational Phase these are not considered to have the potential to exceed the levels assessed for the visual impacts, given the numbers involved (see **ES Vol 2 Appendix 4-2, [EN010153/DR/6.2]**).

11.10.5 There are no mitigation measures recommended beyond those inherent in the Proposed Development's design that would reduce the level of effect identified on each asset during the Operational Phase. Accordingly, it is considered that the residual levels of settings effect would be unchanged from the Operational levels assessed above.

11.11 Cumulative Effects

- 11.11.1 Cumulative effects can result from a combination of impacts, which on their own may not be significant but when combined with others, could generate significant effects.
- 11.11.2 The approach to the Cumulative Effects Assessment is described in **ES Vol 1 Chapter 4 Methodology [EN010153/DR/6.1]**. A short list of projects which the Proposed Development could have potential significant cumulative environmental effects with has been prepared, see **ES Vol 2 Appendix 4-4 Short List of other ‘reasonably foreseeable’ developments [EN010153/DR/6.1]**. The location of the projects is shown on **ES Vol 3 Figure 4-3: Short List Cumulative Schemes – 1km [EN010153/DR/6.3]**.
- 11.11.3 As set out in **ES Vol 1 Chapter 4 Methodology [EN010153/DR/6.1]** there are a number of development schemes located within Protos, a significant development site with the benefit of planning permissions for a range of energy generation and resource management businesses. Due to the proximity of the developments to one another they have been collectively assessed below. Where specific cumulative effects could arise from an individual project these have been expanded on.
- 11.11.4 Project Ref 16 (100MW BESS) and Project Ref 17 (135Kv substation) have also been considered together due to their proximity and the interrelationship of the two projects, referred to as the Halton Schemes.

Halton Schemes - Ref 16 (100MW BESS) and Ref 17 (135Kv substation)

Construction

- 11.11.5 The proposed installation of 100MW battery storage facility and 135KV substation, with associated landscaping and infrastructure, on land to the south-east of the junction between Weaver View and Cholmondeley Road, Runcorn has the potential to result in construction-related direct and indirect impacts upon heritage assets within its development footprint (though it is

noted that they are within a previously developed area). This development footprint, however, does not extend to include any element of the proposed Frodsham Solar development and, therefore, there is no potential for significant cumulative construction effects (direct or indirect). Nor is there considered to be any potential for significant cumulative temporary setting effects (even noting the proximity of the Grade II Listed Remains Of Rock Savage - Asset 145, to the Halton Schemes).

Operation

11.11.6 The Halton Schemes will be located on the eastern side of River Weaver and on land within previously developed areas. It is noted that the Halton Schemes may result in an impact upon the setting of the Grade II Listed Remains Of Rock Savage (Asset 145) because of an increase in-built development immediately to its south. This assessment has concluded that the Frodsham Solar development would result in a neutral effect upon the setting of the Grade II Listed Remains Of Rock Savage (Asset 145). It is anticipated that the Halton Schemes, once completed, may screen some views from Rock Savage of the Frodsham Solar development and, overall, it is assessed that there would be no further impact on an observer's ability to understand, appreciate or experience the contribution that these remains setting make to its overall cultural value. The magnitude of the cumulative impact upon its setting would be Negligible and not significant.

Decommissioning

11.11.7 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Halton Schemes. As the development footprint does not overlap with any element of the proposed Frodsham Solar development footprint there is no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Protos Schemes – Ref 20 (Ince Biopower CO2); Ref 27 (Plastics Recycling Facility); Ref 25 & 28 (Hydrogen Production Facility); Ref 31 (Waste Recycling and hydrogen refuelling); 34 (Standby Electricity Generating Plant); Ref 35 (Post Combustion CO2 Capture Facility); Ref 81 (Protos West AGI)

Construction

11.11.8 Archaeological assessments for development within Protos have previously concluded that the potential for the development area to contain buried archaeological remains is considered to be low. The area has limited potential to include paleoenvironmental remains, medieval to post-medieval ridge and furrow, field boundaries and drains, with sites of potential archaeological interest subject to redevelopment that will have damaged or destroyed any buried remains. The Cheshire Archaeological Planning Advisory Service has confirmed that no further archaeological works are required for developments identified in this short list within Protos. The only overlapping elements of the development footprints of the Protos Schemes with the proposed Frodsham Solar development is the utilisation of existing road infrastructure and, therefore, there is no potential for significant cumulative construction effects (direct or indirect). The Protos Schemes are located beyond the ZTV for the Frodsham Solar development thus there is not considered to be any potential for significant cumulative temporary setting effects.

Operation

11.11.9 The nature of the existing developed environment at Protos is such that significant effects on the setting of heritage assets are unlikely. There is considered to be no potential for significant cumulative setting effects, due to the Protos Schemes being located beyond the ZTV for the Frodsham Solar development.

Decommissioning

- 11.11.10 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Protos Schemes. This development footprint, also, does not extend to include any element of the proposed Frodsham Solar development (with the exception of the utilisation of existing road infrastructure) and, therefore, there is no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Ref 33 (Encirc Automated Warehouse)

Construction

- 11.11.11 The Encirc Automated Warehouse Scheme will be located to the south-west of the existing Protos Facilities and on land within previously developed areas (formerly the Ince A power station and an existing area of hardstanding) limiting the potential for impacts on buried archaeology. Furthermore, the development footprint does not extend to include any element of the proposed Frodsham Solar development and, therefore, there is no potential for significant cumulative construction effects (direct or indirect). There is also not considered to be any potential for significant cumulative temporary setting effects, due to the development being located beyond the ZTV for the Frodsham Solar development.

Operation

- 11.11.12 The nature of the existing surrounding developed environment is such that significant effects on the setting of heritage assets are unlikely. There is considered to be no potential for significant cumulative setting effects, due to the scheme being located beyond the ZTV for the Frodsham Solar development.

Decommissioning

- 11.11.13 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of this Encirc Automated Warehouse Scheme. The development footprint does not extend to include any element of the proposed Frodsham Solar development and, therefore, there is no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Ref 32 (Hydrogen Production Facility)

Construction

- 11.11.14 Hybrid (full and outline) planning application for a hydrogen production plant, storage and distribution facility comprising full planning permission for the demolition of existing structures and erection of new facilities. The development footprint of the Hydrogen Production Facility Scheme is located within an area of previous ground disturbance and as such minimal impact on below ground archaeological deposits are anticipated. This area also does not extend to include any element of the proposed Frodsham Solar development and, therefore, there is no potential for significant cumulative construction effects (direct or indirect). Nor is there considered to be any potential for significant cumulative temporary setting effects, due to the Hydrogen Production Facility Scheme being located beyond the ZTV for the Frodsham Solar development.

Operation

- 11.11.15 The nature of the existing developed environment is such that significant effects on the setting of heritage assets are unlikely. There is considered to be no potential for significant cumulative setting effects, due to the Hydrogen Production Facility Scheme being located beyond the ZTV for the Frodsham Solar development.

Decommissioning

11.11.16 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Hydrogen Production Facility Scheme. As the development footprint does not extend to include any element of the proposed Frodsham Solar development there is no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Ref 37 (HyNet Carbon Dioxide Pipeline)

Construction

11.11.17 This pipeline is a project that has been granted development consent. The only component of this which is material to the Proposed Development is the final section running into Protos, so as per the conclusion noted above for the Protos Schemes, there is no potential for significant cumulative construction effects (direct or indirect). Nor is there considered to be any potential for significant cumulative temporary setting effects, due to this section of the pipeline being located beyond the ZTV for the Frodsham Solar development.

Operation

11.11.18 The operative pipeline would be below ground and thus no cumulative settings effects are anticipated.

Decommissioning

11.11.19 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the HyNet Hydrogen Pipeline. The development footprint does not extend to include any element of the proposed Frodsham Solar development and, therefore, there is no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Ref 38 (HyNet Hydrogen Pipeline)

Construction

11.11.20 The proposed HyNet Hydrogen Pipeline runs through the southern section of the Frodsham Solar Site, with the nearest proposed above ground infrastructure being located on the land between the River Weaver and the Weaver Navigation. The assessment undertaken for the pipeline identified that there was a potential for significant direct effects upon ridge and furrow and removed post-medieval boundaries, artefacts and ecofacts within peat layers (such as those identified within Ince Marshes) and field boundaries and drainage features in Helsby and Frodsham Marshes identified via LiDAR analysis. This ES assessment identified in Section 11.8 the potential for the Proposed Development to also affect these assets that lie within the footprint of the SADA. Where the assets identified are impacted by the pipeline, they would not be subject to additional cumulative effects from the Proposed Development as they would already have been lost. Excavation and recording of the assets when constructing the pipeline would ensure that impacts are offset by ensuring preservation by record.

Operation

11.11.21 The assessment undertaken for the pipeline scheme recorded a potential for significant effects upon the settings of the Grade II Listed Frodsham Bridge (Asset 88) and the Grade II Listed Frodsham Viaduct (Asset 85) as a result of their being located within c.200 m of the Weaver crossing compound. This ES assessment presented in Section 11.8 that there would be no effect on the setting of either of these assets arising from the Frodsham Solar development so it is not considered that the pipeline scheme would result in a significant cumulative effect (though its own effect may well be significant).

11.11.22 The pipeline scheme assessment also recorded potential for significant effects upon the setting of the Grade I Listed Sutton Hall (Asset 20), and associated Grade II Listed feeding trough (Asset 115) and barn (Asset 116)

as a result of the open cut pipeline crossing the main approach to the heritage asset and requiring removal of vegetation along its tree lined avenue. Given the limited and distant visibility of the Frodsham Solar development from the Sutton Hall complex established by the assessment presented in Section 11.8, it is not considered that the pipeline would result in a significant cumulative effect (though its own effect may well be significant).

Decommissioning

- 11.11.23 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the proposed HyNet Hydrogen Pipeline. Therefore, there is considered to be no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

Ref 78 (Runcorn Carbon Dioxide Spur Pipeline)

Construction

- 11.11.24 The proposed Runcorn Carbon Dioxide Spur Pipeline will run along the northern boundary of the Frodsham Solar Site. It is considered that the construction of this pipeline could directly and indirectly impact upon potential archaeological remains. Where the assets are impacted by the pipeline, they would not be subject to additional cumulative effects from the Proposed Development as they would already have been lost or damaged. Excavation and recording of the assets when constructing the pipeline would ensure that impacts are offset by ensuring preservation by record.

Operation

- 11.11.25 The operative pipeline would be below ground and thus no cumulative settings effects are anticipated.

Decommissioning

11.11.26 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Runcorn Carbon Dioxide Spur Pipeline. Therefore, there is considered to be no potential for significant cumulative decommissioning effects (direct or indirect, or temporary setting impacts during the decommissioning phase).

11.12 Conclusions

- 11.12.1 This Chapter provides an assessment of the effects of the Proposed Development upon archaeological and cultural heritage assets. This includes direct and indirect effects resulting from the construction, operation and decommissioning of the Proposed Development, and effects upon the settings of heritage assets which may arise during operation of the Proposed Development.
- 11.12.2 This assessment has been conducted with regard to the NPSs (EN-1^{xc}, EN-3^{xcii} and EN-5^{xcii}) and with reference to the National Planning Policy Framework (NPPF^{xciii}), and the accompanying online Planning Practice Guidance (PPG^{xciv}).
- 11.12.3 Pre-application consultation advice received from the Planning Inspectorate, CAPAS and HE has also been taken into consideration. The primary sources of data for the assessment were Cheshire Historic Environment Record (for HER data), Historic England (for NHLE data and aerial photography), Cheshire West and Chester Council (for Conservation Area information) and Cheshire Archives (for historic and cartographic sources) and observations made during the walkover survey and setting assessment site visits.
- 11.12.4 The majority of known assets identified within the Site are related to post-medieval agricultural practices and modern second world war structures, most of which appear to be sealed beneath thick canal dredging deposits identified within the western and northern parts of the Site. The assessment has also identified a potential for buried peat and organic remains across the Site, though in most instances these deposits are anticipated to be located beneath the foundation levels of the Proposed Development. **Minor adverse** direct effects are predicted upon the possible non-designated ventilation shafts (Asset 16) as these assets are assumed to be destroyed by the development of a solar array in their area. Potential **Negligible adverse** direct effects have been predicted upon ridge and furrow deposits (Asset 257)

and the cells containing canal dredging deposits (Asset 314). These levels of effect are **not significant** in EIA terms.

11.12.5 This assessment has not identified any temporary significant effects upon the settings of any of the designated assets within the Study Area during the construction phase.

11.12.6 This assessment has also established that the operational phase of the Proposed Development would have **Minor adverse effects** upon the settings of the following assets during the Operational Phase (these levels of effect are not significant in EIA terms):

- i) The Promontory Fort On Helsby Hill 250 m North West Of Harmers Lake Farm Scheduled Monument (Asset 1);
- ii) The Grade II Listed War Memorial (Asset 93);
- iii) Frodsham Conservation Area (Asset 154);
- iv) Castle Park (Frodsham) Conservation Area (Asset 155) and the Castle Park Grade II Listed Registered Park and Garden (Asset 153); and the
- v) Overton, St Lawrence's (Frodsham) Conservation Area (Asset 156).

11.12.7 It may be possible to mitigate any potential direct or indirect impacts on archaeological remains through programmes of archaeological monitoring, excavation and recording which would allow any remains to be '*preserved by record*'. Therefore, direct effects would either be avoided, minimised or offset.

11.12.8 Residual setting effects would be as per the effects predicted for the operational phase and not significant. As the overall cultural value of these assets will remain intact and appreciable the level of harm is considered to be '*less than substantial*'. The policy test in NPS EN-1 specifies that this '*less than substantial*' harm this '*should be weighed against the public benefits of the proposal, including, where appropriate securing its optimum viable use*'^{xcv}. This exercise is undertaken in the **Planning Statement [EN010153/DR/5.6]**, which concludes that the public benefits of the proposal outweighs the less than substantial harm identified to heritage assets.

11.13 References

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