



**RWE Renewables UK Dogger Bank
South (West) Limited**

**RWE Renewables UK Dogger Bank
South (East) Limited**

Dogger Bank South Offshore Wind Farms

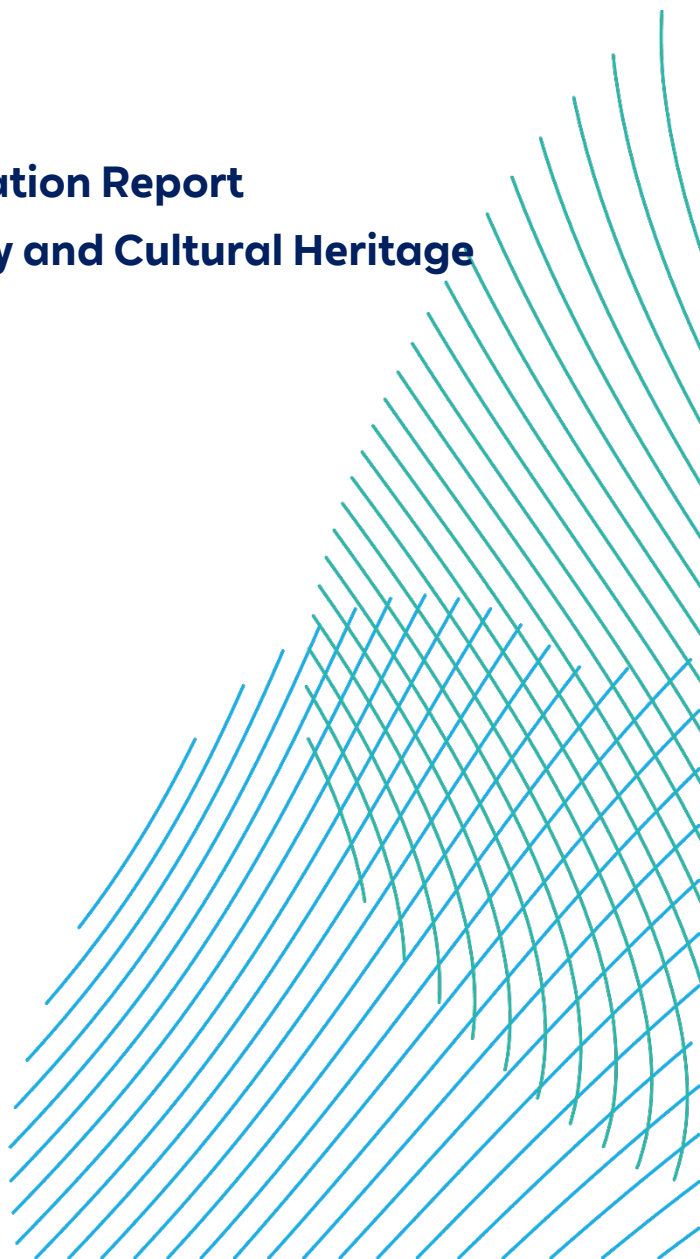
**Preliminary Environmental Information Report
Chapter 22 – Onshore Archaeology and Cultural Heritage**

25/04/2023

Document Reference: 004300131

Revision: 03

Unrestricted





Company:	RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited	Asset:	Development		
Project:	Dogger Bank South Offshore Wind Farms	Sub Project/Package:	Consents		
Document Title or Description:	Preliminary Environmental Information Report – Chapter 22 – Onshore Archaeology and Cultural Heritage				
Document Number:	004300131-03	Contractor Reference Number:	PC2340-RHD-ON-ZZ- RP-Z-0062		
<i>The document Originator shall complete this Cover Sheet and may give guidance below on any actions required by the recipient(s). The document Checker and Approver must not be the same person. The Document Author and Approver must not be the same person. The Approver must not be less senior than the Author.</i>					
<i>COPYRIGHT © RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited.</i> <i>All pre-existing rights reserved.</i> <i>This document is supplied on and subject to the terms and conditions of the Contractual Agreement relating to this work, under which this document has been supplied, in particular:</i> LIABILITY <i>In preparation of this document RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited has made reasonable efforts to ensure that the content is accurate, up to date and complete for the purpose for which it was contracted. RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited makes no warranty as to the accuracy or completeness of material supplied by the client or their agent.</i> <i>Other than any liability on RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited detailed in the contracts between the parties for this work RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.</i> <i>Any persons intending to use this document should satisfy themselves as to its applicability for their intended purpose.</i> <i>The user of this document has the obligation to employ safe working practices for any activities referred to and to adopt specific practices appropriate to local conditions.</i>					
Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	08/03/2023	First Issue	SM	JF/RH	AP
02	18/04/2023	Second Issue	MJ	FB	JF
03	25/04/2023	Third Issue	MJ	JF	LT

Unrestricted

Contents

22	Onshore Archaeology and Cultural Heritage.....	6
22.1	Introduction	6
22.2	Consultation	7
22.3	Scope	12
22.3.1	Study Area.....	12
22.3.2	Realistic Worst Case Scenario.....	12
22.3.2.1	General Approach.....	12
22.3.2.2	Development Scenarios	17
22.3.2.3	Construction Scenarios	17
22.3.2.4	Operation Scenarios	18
22.3.2.5	Decommissioning Scenarios.....	19
22.3.3	Mitigation Embedded in the Design.....	19
22.4	Assessment Methodology	21
22.4.1	Policy, Legislation and Guidance.....	21
22.4.1.1	National Policy Statements	21
22.4.1.2	Other.....	24
22.4.2	Data and Information Sources.....	30
22.4.2.1	Site Specific Surveys.....	30
22.4.2.2	Other Available Sources.....	32
22.4.3	Impact Assessment Methodology	35
22.4.4	Historic Landscape Character	41
22.4.5	Cumulative Effect Assessment Methodology	42
22.4.6	Transboundary Effects Assessment Methodology	43
22.4.7	Assumptions and Limitations.....	43
22.5	Existing Environment.....	44
22.5.1	Introduction	44
22.5.2	Designated Heritage Assets.....	45
22.5.2.1	Heritage Importance	45
22.5.3	Non-Designated Heritage Assets.....	45
22.5.3.1	Palaeolithic	46
22.5.3.2	Mesolithic.....	46

22.5.3.3	Neolithic	47
22.5.3.4	Bronze Age.....	47
22.5.3.5	Iron Age	47
22.5.3.6	Prehistoric (undefined)	48
22.5.3.7	Roman.....	48
22.5.3.8	Early Medieval	49
22.5.3.9	Medieval.....	49
22.5.3.10	Post-Medieval	50
22.5.3.11	Modern.....	50
22.5.3.12	Undated	51
22.5.3.13	Previous Archaeological Investigations.....	52
22.5.4	APS Assessment of Aerial Imagery	54
22.5.5	Heritage Walkover Survey	55
22.5.6	Archaeological Geophysical Survey.....	56
22.5.7	Potential Sub-surface Archaeological Remains.....	57
22.5.8	Above Ground Archaeological Remains and Heritage Assets	71
22.5.9	Archaeological Potential within the Onshore Development Area.....	72
22.5.10	Heritage Importance	73
22.5.11	Heritage Setting Considerations	74
22.5.12	Historic Landscape Characterisation	75
22.5.13	Geoarchaeological and Palaeoenvironmental Potential	76
22.5.14	Future Trends.....	78
22.6	Ongoing and Forthcoming Programmes of Assessment and Survey	79
22.6.1	Below Ground Archaeology	79
22.6.2	Geoarchaeological and Palaeoenvironmental Remains	79
22.6.3	The Setting of Heritage Assets.....	80
22.7	Assessment of Significance	81
22.7.1	Potential Effects During Construction	81
22.7.1.1	Impact 1 Direct Physical Impact on (Permanent Change to) Designated Heritage Assets	83
22.7.1.2	Impact 2 Direct Physical Impact on (Permanent Change to) Non-designated Heritage Assets (Including Buried Archaeological Remains, Historic Earthworks and Structures).....	84

22.7.1.3 Impacts 3 and 4 Indirect Physical Impact on (Permanent Change to) Designated and Non-designated Heritage Assets	92
22.7.1.4 Impacts 5 and 6 Temporary Change to the Setting of Heritage Assets (Both Designated and Non-designated) Which Could Affect Their Heritage Significance	96
22.7.2 Potential Effects During Operation	98
22.7.2.1 Impacts 7 and 8 Permanent Change to the Setting of Heritage Assets (Both Designated and Non-designated) Which Could Affect Their Heritage Significance	99
22.7.3 Potential Effects During Decommissioning.....	102
22.8 Potential Monitoring Requirements.....	103
22.9 Preliminary Assessment of Cumulative Effects.....	103
22.9.1 Initial Screening for Cumulative Effects.....	103
22.9.2 Plans/Projects Considered for Cumulative Impacts.....	106
22.10 Interactions	107
22.11 Inter-relationships.....	111
22.12 Summary	113

Tables

Table 22-1 Consultation Responses	7
Table 22-2 Realistic Worst Case Design Parameters.....	13
Table 22-3 Embedded Mitigation Measures	20
Table 22-4 NPS Assessment Requirements	22
Table 22-5 Standards and Guidance	28
Table 22-6 Other Available Data and Information Sources.....	33
Table 22-7 Definition of Importance for Cultural Heritage Assets.....	37
Table 22-8 Definition of Magnitude of Impact to Heritage Assets	38
Table 22-9 Significance of Effect Matrix.....	40
Table 22-10 Definition of Effect Significance.....	41
Table 22-11 Summary of Potential Archaeological Remains Identified to Date.....	58
Table 22-12 Possible Above Ground Heritage Assets Within the Onshore Development Area.....	71
Table 22-13 Potential Cumulative Effects.....	104
Table 22-14 High-Level List of Plans/Projects Screened for Further Assessment in the Final CEA.....	106

Unrestricted

Table 22-15 Interactions Between Construction Impacts - Screening.....	108
Table 22-16 Inter-relationship Between Impacts – Phase and Lifetime Assessment.....	110
Table 22-17 Onshore Archaeology and Cultural Heritage Inter-relationships.....	111
Table 22-18 Summary of Potential Likely Significant Effects on Onshore Archaeology and Cultural Heritage	114

Volume 2 - Figures

Figure 22-1 Onshore Archaeology and Cultural Heritage Study Areas

Figure 22-2 Known Heritage Assets Located within the Onshore Development Boundary

Figure 22-3 Location of Designated Heritage Assets within Study Area

Volume 3 – Appendices

Appendix 22.1 Archaeological Desk Based Assessment

Appendix 22.2 Assessment of Airborne and Satellite Remote Sensing Data and Map Regression Analysis for Archaeology

Appendix 22.3 Heritage Walkover Report

Appendix 22.4 Initial Setting Assessment of Substation Zones 1 and 4

Appendix 22.5 Geoarchaeological Desk Based Assessment

Appendix 22.6 Geophysical Assessment Report

Glossary

Term	Definition
Dogger Bank South (DBS) offshore wind farms	The collective name for the two Projects, DBS East and DBS West.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Geoarchaeology	The application of earth science principles and techniques to the understanding of the archaeological record. Includes the study of soils and sediments and of natural physical processes that affect archaeological sites such as geomorphology, the formation of sites through geological processes and the effects on buried sites and artefacts.
Horizontal directional drilling (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossings other obstacles such as roads, railways and watercourses onshore.
Jointing bays	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into buried ducts.
Landfall	The point on the coastline at which the offshore export cables are brought onshore, connecting to the onshore export cables at the Transition Joint Bay.
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the onshore substations, Transition Joint Bays or temporary access routes; but includes construction compounds (purely for the cable route).
Onshore Export Cables	Onshore export cables take the electricity from the Transition Joint Bay to the onshore substations.

Term	Definition
Onshore Development Area	The Onshore Development Area for PEIR is the boundary within which all onshore infrastructure required for the Projects will be located including landfall, onshore export cable route, accesses, construction compounds and onshore substations. The Onshore Development Area is to be refined through the consultation and engineering review process.
Onshore Substation Zone	Parcels of land within the Onshore Development Area where the onshore substation infrastructure (including the haul roads, temporary construction compounds and associated cable routing) may be located.
The Applicant	RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited as the owners of DBS West and DBS East respectively are the named undertakers that will have the benefit of the Development Consent Order. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited.
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South offshore wind farms).
Scoping Report	The report that was produced in order to request a Scoping Opinion from the Secretary of State.
Scoping Opinion	The report adopted by the Planning Inspectorate on behalf of the Secretary of State.
Setting	The NPPF identifies setting as that which encompasses an asset's surroundings in which it is experienced. The extent of setting is not fixed and can contribute both positively and negatively to the heritage significance of an asset.
Transition Joint Bay (TJB)	The Transition Joint Bay (TJB) is an underground structure at the landfall that houses the joints between the offshore export cables and the onshore export cables.

Acronyms

Term	Definition
ADBA	Archaeological Desk-Based Assessment
ADS	Archaeology Data Service
AfL	Agreement for Lease
ALS	Airborne Laser Scanning
APS	Air Photo Services Limited
BEIS	Business, Energy and Industrial Strategy
BP	Before Present
CAA	Conservation Area Appraisal
CEA	Cumulative Effects Assessment
CHIA	Cultural Heritage Impact Assessment
CIfA	Chartered Institute for Archaeologists
DBA	Desk-Based Assessment
DCMS	Department of Culture, Media and Sport
DCO	Development Consent Order
DBS	Dogger Bank South
DMV	Deserted Medieval Village
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
EPP	Evidence Plan Process

Term	Definition
ETG	Expert Topic Group
GIS	Geographic Information System
GW	Gigawatt
HDD	Horizontal Directional Drilling
HECA	Historic Environment Character Area
HER	Historic Environment Record
IEMA	Institute of Environmental Management and Assessment
IHBC	Institute of Historic Building Conservation
km	Kilometre
LVIA	Landscape and Visual Impact Assessment
MHCLG	Ministry of Housing, Communities and Local Government
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NHLE	National Heritage List of England
NMP	National Mapping Programme
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRHE	National Record of the Historic Environment
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
MW	Megawatt

Term	Definition
PAS	Portable Antiquities Scheme
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PPG	Planning Practice Guidance
RWE	RWE Renewables UK Ltd
SLVIA	Seascape, Landscape and Visual Impact Assessment
SoCC	Statement of Community Consultation
UK	United Kingdom
WSI	Written Scheme of Investigation
WTG	Wind turbine generator
WWII	World War Two
ZTV	Zone of Theoretical Visibility

22 Onshore Archaeology and Cultural Heritage

22.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) considers the likely significant effects of the Projects on Onshore Archaeology and Cultural Heritage. The chapter provides an overview of the existing environment for the proposed Onshore Development Area and wider study areas, followed by an assessment of likely significant effects for the construction, operation, and decommissioning phases of the Projects.
2. The assessment should be read in conjunction with the following linked chapters:
 - **Chapter 17 Offshore Archaeology and Cultural Heritage;**
 - **Chapter 20 Flood Risk and Hydrology;**
 - **Chapter 23 Landscape and Visual Impact Assessment;**
 - **Chapter 24 Traffic and Transport;**
 - **Chapter 25 Noise;** and
 - **Chapter 26 Air Quality.**
3. Additional information to support the Onshore Archaeology and Cultural Heritage assessment include:
 - **Appendix 22.1 Archaeological Desk Based Assessment;**
 - **Appendix 22.2 Assessment of Airborne and Satellite Remote Sensing Data and Map Regression Analysis for Archaeology;**
 - **Appendix 22.3 Heritage Walkover Report;**
 - **Appendix 22.4 Initial Setting Assessment of Substation Zones 1 and 4;**
 - **Appendix 22.5 Geoarchaeological Desk based Assessment;** and
 - **Appendix 22.6 Geophysical Assessment Report.**

22.2 Consultation

4. Consultation with regard to Onshore Archaeology and Cultural Heritage has been undertaken in line with the general process described in **Chapter 6 EIA Methodology**. The key elements of consultation to date have included scoping and the ongoing Evidence Plan Process (EPP) via the Expert Topic Group (ETG) which comprises Historic England, East Riding of Yorkshire Council, and the Humber Archaeology Partnership. The feedback received from the ETG meetings and the Scoping Opinion has been considered in preparing the PEIR. **Table 22-1** provides a summary of how the consultation responses received to date have influenced the approach that has been taken.
5. This chapter will be updated following consultation on PEIR in order to produce the final assessment that will be submitted with the Development Consent Order (DCO) application. Full details of the consultation process will also be presented in the Consultation Report alongside the DCO application.

Table 22-1 Consultation Responses

Comment	Project Response
ETG Meeting 1 – Historic England, East Riding of Yorkshire Council 15/09/2021	
An overall introduction to the Project was provided, including Project details, the route selection process, and Scoping Assessment Methodology.	N/A
Planning Inspectorate Scoping Opinion 02/09/2022	
"The Scoping Report states that the Proposed Development will not result in direct physical impacts to onshore heritage assets during operation, however no evidence is provided in relation to hydrological changes that may extend into the operational phase or in relation to heating effects from electrical infrastructure. It is noted that Section 3.4 rules out soil heating but identifies impacts to soil drainage during operation, and this evidence should be applied to the archaeology assessment in the ES. It is also noted that Section 3.3 scopes in assessment of surface water changes and flood risk during operation, and it is not clear how this has informed the proposed scope of the archaeological assessment.	Noted. The likely significant effects arising from changes in preservation conditions as a result of hydrological changes during the operation phase will be assessed and presented at ES stage once detailed drainage plans are known (or assuming a worst-case scenario). The likely significant changes in preservation conditions as a result of hydrological changes during the construction phase are assessed in section 22.7.

Comment	Project Response
In the absence of this evidence, the Inspectorate does not agree that these matters can be scoped out of the ES. The ES should provide an assessment of the likely significant effects arising from changes in preservation conditions during the operational phase."	
"The Report states that further investigations such as geophysical survey will be undertaken following the results of the desk-based assessment and trial trenching will be considered if required. The ES must provide a clear understanding of the impacts on the known deposits, assess the impact of the route on previously unknown deposits (geophysics and where necessary trial trenching along the cabling route and substations) and agree a mitigation strategy that can be submitted with the DCO application. The Inspectorate considers that an appropriate evaluation technique will need to be defined in consultation with the County archaeologists and Historic England. Supporting technical heritage information (full survey reports) should be included as appendices to the ES."	The results of desk-based assessment and geophysical survey completed up to end of December 2022 are presented in Appendices 22.1 to 22.6 . A summary of these results is provided in section 22.6 and informs the impact assessment in section 22.7. Appropriate evaluation techniques will be discussed and agreed with the ETG.
"In addition to the documents listed, the Inspectorate advises that the following guidance documents should be taken into consideration: - Historic England Advice Note 15 Commercial Renewable Energy Development and the Historic Environment (2021): https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/heag302-commercial-renewable-energy-development-historic-environment/. - Historic England (2016) Preserving Archaeological Remains https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/heag100a-preserving-archaeological-remains/.	Noted. These guidance documents have been used to inform the impact assessment and mitigation requirements presented in section 22.7. Document 'Archaeological Written Scheme of Investigation for Offshore Wind Farm Projects' (Crown Estate, 2011) has been used to inform Chapter 17 Offshore Archaeology and Cultural Heritage.

Comment	Project Response
• Historic England (2019) Piling and Archaeology https://historicengland.org.uk/images-books/publications/piling-and-archaeology/heag270-piling-and-archaeology/. • Crown Estate (2021) Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects https://www.thecrownestate.co.uk/media/3917/guide-to-archaeological-requirements-for-offshore-wind.pdf.	
Historic England Scoping Opinion 02/09/2022	
We felt that the suggested archaeological approach lacks a coherent research emphasis. The main reason for this is that the Onshore route traverses one of the most interesting and complex areas of archaeology in England. With the Yorkshire Wolds and its immediate hinterland a priority area for Historic England, with a research Framework for the Wolds (which is not referenced in the EIA Scoping Report), and recent work by the University of Reading that has established that large areas of Holderness are covered by warp deposits which have buried entire prehistoric landscapes. We therefore would have expected the applicant to meet with the Local Authority archaeologist to agree a suite of high-level research questions for the project, and this would help guide where physical interventions would be most profitable and of greatest public benefit. Additionally, we find that EIA documents tend to follow a particular format and this format can get in the way of the applicant thinking in research terms, thinking creatively and about what the archaeology might or could achieve. Specifically, Table 1.5 and Methodology: We understand that the applicant is using an industry standard for assessing impact, but Historic England has some concerns about this 'standard'. The issue is that the 'standard' assesses 'significance of impact', whereas Historic England is concerned with the 'impact on significance'. This may seem a minor quibble over language, but there are real world implications in this distinction. The Developer therefore needs to	The Onshore Development Area will be refined throughout the EIA process. Following the final design freeze of the Onshore Development Area, the development of research questions for the Projects can be discussed with Humber Archaeology Partnership. The assessment methodology follows the Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC and ClfA, 2021) and is detailed further in section 22.4.3. The assessment methodology adopted defines the heritage assets and their settings, likely to be impacted by the Projects and assesses the level of any resulting benefit, harm or loss to their significance.

Comment	Project Response
acknowledge that there is a difference in approach and possibly outcomes and ensure that their assessment and analysis fully characterises significance, and impact on significance.	
Point 709: regarding targeted trial trenching. The text suggests that 'targeted trial trenching will be based on the results of baseline surveys and geophysical surveys where they have identified a high potential for buried archaeological remains to be present ...' we understand the suggested rationale but there needs to be a more imaginative response to sampling and trial trenching – as outlined in our General Point above.	Noted. The programme of trial trenching will be agreed in consultation with Humber Archaeology Partnership.
Related to the above paragraph, is a proper analysis and assessment of setting and the contribution which setting makes to significance. Setting is not entirely visual and relates instead to the manner in which places are experienced. Views, viewpoints and view lines should not be solely assessed from PRow and public access locations: as the whole landscape is to be considered. The Developer is to undertake assessment which encompasses 'dynamic' or 'kinetic' movement through the landscape, exploring the manner in which places change, emerge and recede.	An initial setting assessment of heritage assets potentially affected by the substation zones is presented in Appendix 22.4 . A detailed setting assessment including photomontages will be presented at ES stage. A site meeting with Historic England is proposed to discuss methodology and heritage viewpoints.
In Point 698, the Developers have stated how they intend to characterise the existing historic environment. Historic England points out that any archaeology and cultural heritage chapter of the EIA should start with a summary of the Geomorphology of the onshore study area.	Noted. The assessments are ongoing and will be presented at ES. The baseline geomorphology of the Onshore Development Area is presented in Chapter 20 Flood Risk and Hydrology .
"In Point 707, the Developers have stated the data sources they utilised to help characterise the existing historical environment. Historic England would point out that the Rapid Coastal Zone Assessment for Yorkshire and Lincolnshire could be used to further inform the Baseline data, this can be accessed here: (https://archaeologydataservice.ac.uk/archives/view/yorksacza_eh_2009/)."	Noted. This resource was accessed to inform the Archaeological Desk Based Assessment (ADBA) (Appendix 22.1).

Comment	Project Response
ETG Meeting 2 – Historic England and Humber Archaeology Partnership 20/10/2022	
Geophysical Survey WSI: WSI to be updated to include additional geophysical survey techniques such as magnetometry which provides good results even in areas of alluvial deposits. Opportunities for further discussions will be arranged once geophysical data is available to better understand blank area with the use of local knowledge.	Geophysical Survey WSI was updated January 2023 and reissued to Humber Archaeology Partnership for approval.
Geophysics Priority Areas: Recommended that the CITiZAN database be checked for any additional records as they are not integrated into the HER.	This resource was accessed to inform the priority geophysical survey locations.
ETG Meeting 3 – Historic England and East Riding of Yorkshire Council 19/01/2023	
Usual concern of setting studies is that they're conducted from set points and should take a more dynamic approach looking at how setting changes as you move through the landscape.	A site meeting will be arranged to identify how effects on setting may change across the landscape, and to agree heritage viewpoints.
Main concern is the impact on the view from the Minster and Church of St Mary. Topography might rule out impacts on other sites such as Walkington Conservation Area.	An initial setting assessment of heritage assets potentially affected by the Substation Zones is presented in Appendix 22.4. A detailed setting assessment including photomontages will be presented at ES stage.

22.3 Scope

22.3.1 Study Area

6. The Onshore Development Area includes the following elements:
 - Two possible landfall locations;
 - An onshore export cable corridor;
 - Onshore Substation Zones; and
 - Connection to the National Grid.
7. All elements of the Projects which fall within the intertidal area are assessed within **Chapter 17 Offshore Archaeology and Cultural Heritage**.
8. Two study areas have been agreed with the Historic Environment ETG for onshore archaeology and cultural heritage on the basis of:
 - Non-Designated Heritage Assets Study Area - known non-designated heritage assets, potential buried archaeological remains and previously unrecorded above ground heritage assets within 500m of the Onshore Development Area (**Figure 22.1**); and
 - Designated Heritage Assets Study Area - designated heritage assets within 1km of the Onshore Development Area and 5km of the onshore Substation Zones, to inform a setting assessment of heritage assets identified as potentially being affected by the development through a change in their setting (**Figure 22.1**).
9. Potential effects from the presence of the offshore infrastructure are not considered likely due to the distance from the coast and are therefore not assessed within this chapter.

22.3.2 Realistic Worst Case Scenario

22.3.2.1 General Approach

10. The realistic worst case design parameters for likely significant effects scoped into the EIA for the **Chapter 22 Onshore Archaeology and Cultural Heritage** assessment are summarised in **Table 22-2**. These are based on the project parameters described in **Chapter 5 Project Description**, which provides further details regarding specific activities and their durations.
11. In addition to the design parameters set out in **Table 22-2**, consideration is also given to the different development scenarios still under consideration and the possible phasing of the construction as set out in **Sections 22.3.2.2, 22.3.2.3, 22.3.2.4 and 22.3.2.5**.

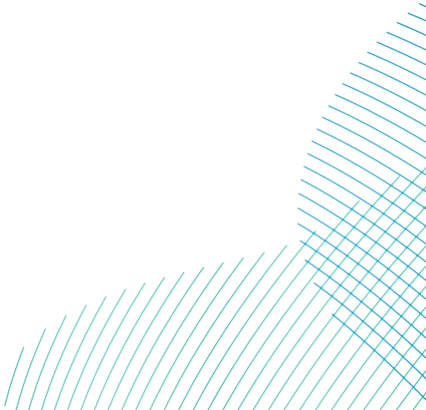
Table 22-2 Realistic Worst Case Design Parameters

	Parameter			
	DBS East or DBS West in isolation	DBS East and DBS West concurrently	DBS East and DBS West sequentially	Notes and rationale
Construction				
Impact 1: Direct Physical Impact on (permanent change to) Designated Heritage Assets	Landfall HDD (temporary works) physical parameters:	Landfall HDD (temporary works) physical parameters:	Landfall HDD (temporary works) physical parameters:	The worst case scenario represents the maximum footprint and ground disturbance within the Onshore Development Area in which potential direct physical disturbance to designated and non-designated heritage assets could occur. The concurrent and sequential scenarios will involve a greater extent of construction works. Therefore the DBS East and DBS West concurrently and DBS East and DBS West sequentially scenarios are considered equally worst case and assessed in this Chapter.
Impact 2: Direct Physical Impact on (permanent change to) Non-designated Heritage Assets	- HDD compound works area = 230 x 75m (for four HVAC) - Total works area: 582,661m² - Transition joint bay size = 5 x 20m - Maximum no. of transition joint bays = 4 (4x HVAC) - Maximum HDD depth = 20m - Maximum number of HDD = 5 (4x power cables plus 1x spare)	- HDD compound works area = 310 x 75m (for four HVAC, two HVDC and one spare) - Total works area: 602,661m² - Transition joint bay size = 5 x 20m - Maximum no. of transition joint bays = 6 (4x HVAC, 2x HVDC) - Maximum HDD depth = 20m - Maximum number of HDD = 9 (6x power cables, 1x fibre optic cable plus 2 spare)	- HDD compound works area = 310 x 75m (for four HVAC, two HVDC and one spare) - Total works area: 602,661m² - Transition joint bay size = 5 x 20m - Maximum no. of transition joint bays = 6 (4x HVAC, 2x HVDC) - Maximum HDD depth = 20m - Maximum number of HDD = 9 (6x power cables, 1x fibre optic cable plus 2 spare)	
Impact 3: Indirect Physical Impact on (permanent change to) Designated Heritage Assets	Onshore export cable route construction physical parameters:	Onshore export cable route construction physical parameters:	Onshore export cable route construction physical parameters:	
Impact 4: Indirect Physical Impact on (permanent change to) Non-designated Heritage Assets	- Working width = 50m (up to 125m at trenchless crossings) - Corridor length = 39km - No. of trenches = Up to 5 - Maximum cable burial depth (where restrictions are not present) = 2m - Indicative cable burial depth: 1.6m - Haul road width = 7m (increasing to 11m at passing places) - Jointing bays = every 0.75 – 1.5km - Jointing bay construction footprint (per bay) = 10 x 25m - Jointing bay depth = 2.2m - Main construction compound = 100 x 100m	- Working width = 100m (up to 250m at trenchless crossings) - Corridor length = 39km - No. of trenches = 7 - Maximum cable burial depth (where restrictions are not present) = 2m - Indicative cable burial depth: 1.6m - Haul road width = 7m (increasing to 11m at passing places) - Jointing bays every 0.75 – 1.5km - Jointing bay construction footprint (per bay) = 10 x 25m - Jointing bay depth = 2.2m - Main construction compound = 100 x 100m	- Working width = 100m (up to 250m at trenchless crossings) - Corridor length = 39km - No. of trenches = Up to 7 - Maximum cable burial depth (where restrictions are not present) = 2m - Indicative cable burial depth: 1.6m - Haul road width = 7m (increasing to 11m at passing places) - Jointing bays every 0.75 – 1.5km - Jointing bay construction footprint (per bay) = 10 x 25m - Jointing bay depth = 2.2m - Main construction compound = 100 x 100m	

	Parameter			
	DBS East or DBS West in isolation	DBS East and DBS West concurrently	DBS East and DBS West sequentially	Notes and rationale
	- Secondary construction compounds = 75 x 75m - No. of compounds (est.) = - Main compounds: 2 - Minor compounds: 15 - HDD compounds: 70 - Substation compound: 1	- Secondary construction compounds = 75 x 75m - No. of compounds (est.) = - Main compounds: 4 - Minor compounds: 30 - HDD compounds: 140 - Substation compound: 1 per project	- Secondary construction compounds = 75 x 75m - No. of compounds (est.): - Main compounds: 4 - Minor compounds: 30 - HDD compounds: 140 - Substation compound: 1 per project	
	Trenchless crossings physical parameters: - Maximum width of buried cable = 60m - Maximum trenchless crossing depth = 20m - Trenchless crossing compound dimensions = 50 x 50m - No. of trenchless crossing = 35	Trenchless crossings physical parameters: - Maximum width of buried cable = 227m - Maximum trenchless crossing depth = 20m - Trenchless crossing compound dimensions = 50 x 50m - No. of trenchless crossing = 35	Trenchless crossings physical parameters: - Maximum width of buried cable = 227 - Maximum trenchless crossing depth = 20m - Trenchless crossing compound dimensions = 50 x 50m - No. of trenchless crossing = 35	
	Onshore substation (temporary works) physical parameters: Total construction area = 180,000m² (based on one HVAC (AIS) substation + temporary construction compound)	Onshore substation (temporary works) physical parameters: Total construction area = 274,416m² (based on one HVAC (AIS) substation + temporary construction compound, and one HVDC substation + temporary construction compound)	Onshore substation (temporary works) physical parameters: Total construction area = 274,416m² (based on one HVAC (AIS) substation + temporary construction compound, and one HVDC substation + temporary construction compound)	
Impact 5: Temporary Change to the Setting of Designated Heritage Assets which could affect their Heritage Significance Impact 6: Temporary Change to the Setting of	Landfall: Duration of works: up to 18 months.	Landfall: Duration of works: up to 18 months.	Landfall: Duration of works: up to 42 months.	The worst case scenario represents the maximum duration in which temporary change to the setting of designated and non-designated heritage assets could occur. The sequential scenario will result in the longest duration. Therefore the DBS East and DBS West
	Onshore export cable route: Duration of works: up to 33 months.	Onshore export cable route: Duration of works: up to 33 months.	Onshore export cable route: Duration of works: up to 57 months.	
	Onshore substation: Duration of works: up to 4 years.	Onshore substation: Duration of works: up to 4 years.	Onshore substation: Duration of works: up to 6 years.	

	Parameter			
	DBS East or DBS West in isolation	DBS East and DBS West concurrently	DBS East and DBS West sequentially	Notes and rationale
Non-designated Heritage Assets which could affect their Heritage Significance				sequentially scenario is considered worst case and assessed in this Chapter.
Operation				
Impact 7: Permanent Change to the Setting of Designated Heritage Assets which could affect their Heritage Significance Impact 8: Permanent Change to the Setting of Non-designated Heritage Assets which could affect their Heritage Significance	Onshore substation parameters: - Permanent substation area: 135,000m² (based on one HVAC substation) Substation buildings: - Tallest building: 24m - Largest building footprint: 55 x 45m - Tallest structure: 27m height Access road: - Number: 1 - Length: TBC - Width: TBC Operation duration: 30 years Lighting: security /operational lighting within the compound. Implementation of basic landscape screening (details TBC).	Onshore substation parameters: - Permanent substation area: 199,416m² (based on one HVAC substation) Substation buildings: - Tallest building: 24m - Largest building footprint: 55 x 45m - Tallest structure: 27m height Access road: - Number: 1 - Length: TBC - Width: TBC Operation duration: 30 years Lighting: security /operational lighting within the compound. Implementation of basic landscape screening (details TBC).	Onshore substation parameters: - Permanent substation area: 199,416m² (based on one HVAC substation) Substation buildings: - Tallest building: 24m - Largest building footprint: 55 x 45m - Tallest structure: 27m height Access road: - Number: 1 - Length: TBC - Width: TBC Operation duration: 32 years Lighting: security /operational lighting within the compound. Implementation of basic landscape screening (details TBC).	The worst case scenario represents the maximum intrusive effect of the permanent above ground structures (i.e. maximum height and massing) in which a permanent change to the setting of designated and non-designated heritage assets could occur. The concurrent and sequential scenarios will require two substations therefore will have greater effects than DBS West or DBS East in isolation. The sequential scenario will result in a slightly longer operational duration, due to the assumed two-year lag in construction between the two Projects. Therefore the DBS East and DBS West sequentially scenario is considered worst case and assessed in this Chapter.

	Parameter			
	DBS East or DBS West in isolation	DBS East and DBS West concurrently	DBS East and DBS West sequentially	Notes and rationale
Decommissioning				
No final decision regarding the final decommissioning policy for the onshore project infrastructure including landfall, onshore cable route and onshore substation has yet been made. It is also recognised that legislation and industry best practice change over time. However, it is likely that the onshore project equipment, including the cable, will be removed, reused or recycled wherever possible and the transition bays and cable ducts being left in place. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and will be agreed with the regulator. It is anticipated that for the worst case scenario, the impacts will be no greater than those identified for the construction phase.				



22.3.2.2 Development Scenarios

12. There are currently two possible electrical solutions being considered for DBS West, HVAC or HVDC. Due to the distance of the array area offshore DBS East will be an HVDC project. Therefore, there are two possible electrical solutions for the Projects:
 - One HVDC project and one HVAC project; or
 - Two HVDC projects.
13. There are different parameters required for the onshore substations depending on which electrical solution is selected. Therefore, there are four possible development scenarios within the onshore substation zones that could be taken forward:
 - Two HVDC substations in Substation Zone 4;
 - One HVDC substation in Substation Zone 1 and one HVAC substation in Substation Zone 4;
 - One HVDC substation in Substation Zone 4 and one HVAC substation in Substation Zone 1; or
 - One HVDC substation in Substation Zone 1 and one HVDC substation in Substation Zone 4.
14. In order to ensure that a robust assessment has been undertaken, all development scenarios and options have been considered to ensure the realistic worst case scenario for each topic has been assessed. Further details are provided in **Chapter 5 Project Description**.

22.3.2.3 Construction Scenarios

15. The following principles set out the framework for how the Projects may be constructed (relating to both onshore and offshore works):
 - DBS East and DBS West may be constructed at the same time, or at different times;
 - If built concurrently, both Projects could be constructed in five years;
 - If built non-concurrently, either Project could be built first;
 - If built non-concurrently, each Project would require a five year period of construction;
 - If built non-concurrently, it is anticipated that there would be up to a two year lag between the start of construction for the first project and the start of construction for the second project; and

- Assuming a maximum construction period per Project of five years, and taking the above into account, the maximum construction period over which the construction of both Projects could take place is seven years.
16. In order to determine which construction scenario presents the realistic worst case for each receptor and impact, the assessment considers both maximum duration effects and maximum peak effects, in addition to each Project being developed in isolation, drawing out any differences between each of the two Projects.
17. The three construction scenarios considered by the Onshore Archaeology and Cultural Heritage assessment are therefore:
- Build DBS East or build DBS West in isolation;
 - Build DBS East and DBS West concurrently – reflecting the maximum peak effects; and
 - Build the Projects sequentially with a lag of up to two years – reflecting the maximum duration of effects.
18. The individual, concurrent and sequential construction scenarios all allow for flexibility to build out the Projects using a phased approach. This will allow the Projects to adapt to National Grid Electricity Transmission Operator's development plans for the onshore grid connection points. Under a phased approach the maximum timescales for individual elements of the construction have been assessed.
19. Any differences between the Projects, or differences that could result from the manner in which the first and the second Projects are built (concurrent or sequential and the length of any gap) are identified and discussed where relevant in section 22.7. For each potential impact, only the worst case construction scenario for two Projects is presented, i.e. either concurrent or sequential. The justification for what constitutes the worst case is provided, where necessary, in **Table 22-2**.

22.3.2.4 Operation Scenarios

20. Operation scenarios are described in detail in **Chapter 5 Project Description**. The assessment considers the following scenarios:
- Only DBS East in operation;
 - Only DBS West in operation; and
 - The two Projects operating concurrently, with or without a lag of up to two years between each Project commencing operation.

21. If the Projects are built out using a phased approach, there would also be a phased approach to starting the operational stage. The worst case scenario for the operational phase for the Projects has been assessed. See section 5.1.1 of **Chapter 5 Project Description** for further information.
22. The operations lifetime of each Project is expected to be 30 years.

22.3.2.5 Decommissioning Scenarios

23. Decommissioning scenarios are described in **Chapter 5 Project Description**. Decommissioning arrangements will be agreed through the submission of a Decommissioning Programme prior to construction, however for the purpose of this assessment it is assumed that decommissioning of the Projects could be conducted separately, or at the same time.

22.3.3 Mitigation Embedded in the Design

24. This section outlines the embedded mitigation relevant to the Onshore Archaeology and Cultural Heritage assessment, which has been incorporated into the design of the Projects (**Table 22-3**). Where other mitigation measures are proposed, these are detailed in the impact assessment (section 22.7).

Table 22-3 Embedded Mitigation Measures

Parameter	Mitigation Measures Embedded into the Project Design
Mitigation by site selection	The Onshore Development Area has been defined following an extensive site selection process, which has accounted for environmental, engineering, planning and land requirements to identify an optimal project location. The site selection process is described in detail in Chapter 4 Site Selection and Assessment of Alternatives. The site selection process has included consideration of all designated heritage assets, and has avoided direct physical impacts upon designated heritage assets as part of the site selection process. The site selection process has also sought to avoid all direct physical impacts on non-designated and potential heritage assets, wherever possible, using the datasets available at the time of assessment. Where this has not been possible site selection process sought to minimise direct impacts on known non-designated and potential heritage assets.
Outline Written Scheme of Investigation (WSI)	The Projects will submit an Outline WSI alongside the ES to accompany the DCO application. This document will outline the strategy to undertake additional programmes of survey and evaluation post-consent, and will include a range of likely mitigation options and responses to be utilised under various scenarios.

25. As the EIA progresses, further route refinement and micro-siting will be carried out, informed directly by the results of ongoing archaeological surveys i.e. geophysical survey to ensure areas of high archaeological potential are avoided, wherever possible within the confines of engineering and other environmental constraints.
26. As part of the embedded mitigation, the Projects will submit a project-specific draft Outline Written Scheme of Investigation (WSI) as part of the final DCO submission, outlining a commitment to undertake additional programmes of survey and evaluation post-consent to inform the archaeological mitigation requirements. The Outline WSI will be agreed in consultation with the Historic Environment ETG and will be prepared in accordance with industry good practice guidance provided by the Chartered Institute for Archaeology (CIfA).

22.4 Assessment Methodology

22.4.1 Policy, Legislation and Guidance

22.4.1.1 National Policy Statements

27. The assessment of likely significant effects upon onshore archaeology and cultural heritage has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to the Projects are:
- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
 - NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b);
 - NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c);
 - Draft Overarching NPS for Energy (EN-1) (BEIS 2021a);
 - Draft NPS for Renewable Energy Infrastructure (EN-3) (BEIS 2021b); and
 - Draft NPS for Electricity Networks Infrastructure (EN-5) (BEIS 2021c).
28. The specific assessment requirements for onshore archaeology and cultural heritage, as detailed in the NPS, are summarised in **Table 22-4** together with an indication of the section of the PEIR chapter where each is addressed.
29. It is noted that the NPS for Energy (EN-1), the NPS for Renewable Energy Infrastructure (EN-3) and the NPS for Electricity Networks Infrastructure (EN-5) are in the process of being revised. Draft versions were published for consultation in September 2021 by the Department for Business Energy and Industrial Strategy (BEIS) (2021a, 2021b and 2021c, respectively). A review of these draft versions has been undertaken in the context of this PEIR chapter.
30. Following the consultation in 2021 on the draft energy NPS, a new consultation opened on the 30 March 2023 on revised drafts of the energy NPSs, including EN1, EN3 and EN5. Due to the timing of this consultation, and finalisation of this PEIR we have been unable to review and take these revised draft NPS into account within these documents. However, these will be reviewed and incorporated into the final ES where relevant.

Table 22-4 NPS Assessment Requirements

NPS Requirement	NPS Reference	PEIR Section Reference
EN-1 NPS for Energy		
‘As part of the Environmental Statement (ES) the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset.’	Section 5.8.8	The significance and value of the heritage assets considered in this chapter have been detailed in section 22.5. An initial setting assessment and screening exercise has been undertaken (Appendix 22.4) the results of which have informed section 22.7. Issues relating to the setting of offshore and intertidal heritage assets have been considered as part of Chapter 17 Offshore Archaeology and Cultural Heritage.
‘Where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact.’	Paragraph 5.8.9	Section 22.7 has been informed by an Archaeological Desk Based Assessment (ADBA) (Appendix 22.1), Aerial Photograph assessment (Appendix 22.2), Heritage Walkover Survey (Appendix 22.3), Initial Settings Assessment (Appendix 22.4), Geoarchaeological Desk Based Assessment (GDBA) (Appendix 22.5) and Geophysical Survey (Appendix 22.6).

NPS Requirement	NPS Reference	PEIR Section Reference
'The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents.'	Section 5.8.10	This PEIR chapter provides an account of the potential impact of the Projects upon heritage assets and their significance (section 22.7).
EN-3 NPS for Renewable Energy Infrastructure		
'Consultation with the relevant statutory consultees should be undertaken by the applicants at an early stage of the development.'	Section 2.6.140	Regular consultation has been undertaken with the relevant statutory consultees, and through the application of the EPP, as outlined in section 22.2. Consultation will be ongoing throughout the EIA process.
'Assessment should be undertaken as set out in Section 5.8 of EN-1. Desk-based studies should take into account any geotechnical or geophysical surveys that have been undertaken to aid the wind farm design.'	Section 2.6.141	This PEIR chapter has been undertaken in accordance with section 5.8 of EN-1, as detailed above. This chapter has been informed by available geophysical survey information (Appendix 22.6).
EN-5 NPS for Electricity Networks Infrastructure		
...developers will be influenced by Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to "have regard to the desirability... of protecting sites, buildings and objects of architectural, historic or archaeological interest; and... do what [they] reasonably can to mitigate any effect which the proposals would have on the... sites, buildings or objects."	Paragraph 2.2.6	Potential impacts upon sites and objects of archaeological interest onshore are set out in section 22.7 along with a proposed approach to mitigation.

NPS Requirement	NPS Reference	PEIR Section Reference
Draft Overarching NPS for Energy (EN-1) (BEIS, 2021a)		
The applicant is encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected. This can include, where possible: Enhancing, through a range of measures such as sensitive design, the significance of heritage assets or setting affected Considering measures that address those heritage assets which are at risk or which may become at risk, as a result of the Scheme Considering how visual or noise impacts can affect heritage assets, and whether there may be opportunities to enhance access to, or interpretation, understanding and appreciation of, the heritage assets affected by the scheme	Paragraph 5.9.14	Potential opportunities for enhancement of the archaeological record will be presented at the ES stage following refinement of the Onshore Development Area. The ES will be further informed by additional geophysical survey information.

22.4.1.2 Other

31. In addition to the NPS, there are a number of pieces of legislation, policy and guidance applicable to the assessment of Onshore Archaeology and Cultural Heritage. Further detail is provided in **Chapter 3 Policy and Legislative Context**.

22.4.1.2.1 Legislation

32. Works affecting Listed Buildings and Conservation Areas are subject to the Planning (Listed Buildings and Conservation Areas) Act 1990, while those affecting Scheduled Monuments and Archaeological Areas of Importance must consider the Ancient Monuments and Archaeological Areas Act 1979.

33. In the context of listed buildings, Regulation 3 of the Infrastructure Planning (Decisions) Regulations 2010 (the ‘Decisions Regulations’) sets out that it is necessary for the Secretary of State (SoS) to “*have regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses*”. This language differs from the duty in section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 (PLBCAA) for a decision maker to have “*special regard*” and indicates that Parliament intends that a particular approach be taken in the case of NSIPs. The Decisions Regulations have been taken into account in the preparation of this chapter.
34. Additionally, certain hedgerows may be deemed to be historically important under the criteria set out in the Hedgerow Regulations 1997

22.4.1.2.2 Policy

35. This assessment has also been undertaken in a manner consistent with the NPPF, a revised version of which was published by the Ministry of Housing, Communities and Local Government (MHCLG) in July 2021, replacing the original policy from March 2012. Provision for the historic environment is principally given in section 16: Conserving and enhancing the historic environment, which directs local authorities to set out “*a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats*”. Local planning authorities should recognise that heritage assets are “*an irreplaceable resource and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations*” (MHCLG, 2021).
36. The aim of NPPF section 16 is to ensure that Regional Planning Bodies and local authorities, developers and owners of heritage assets adopt a consistent and holistic approach to their conservation and to reduce complexity in planning policy relating to proposals that affect them.

37. To summarise, UK government guidance provides a framework which:
- Recognises that heritage assets are an irreplaceable resource;
 - Requires applicants to provide a level of detail that is proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance;
 - Takes into account the desirability of sustaining and enhancing the significance of heritage assets, including any contribution made by their setting, and putting them to viable uses consistent with their conservation;
 - Places weight on the conservation of designated heritage assets (which include world heritage sites, scheduled monuments, listed buildings, protected wreck sites, registered parks and gardens, registered battlefields or conservation areas), with any anticipated substantial harm weighed against the public benefits of the proposal;
 - Requires applicants to include a consideration of the effect of an application on the significance of non-designated heritage assets, giving regard to the scale of any harm or loss and the significance of the heritage asset;
 - Regard proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) favourably; and
 - Requires developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and impact, and to make this evidence (and any archive generated) publicly accessible.
38. The NPPF's associated Planning Practice Guidance (PPG) 'Conserving and enhancing the historic environment', published in 2014 and updated in 2019, (MHCLG, 2019) includes further information and guidance on how national planning policy is to be interpreted and applied locally. Although the NPPF and PPG is an important and relevant consideration with respect to the Projects, EN-1 (the Overarching NPS for Energy) is the key decision-making document.
39. This chapter also accounts for local and regional policy relevant to the study area and the Projects. The Projects are located within the unitary authority of East Riding of Yorkshire. East Riding of Yorkshire Council adopted the East Riding Local Plan in April 2016. This contains the following policy relating to archaeology and cultural heritage:

Policy ENV3: Valuing our heritage

- A. Where possible, heritage assets should be used to reinforce local distinctiveness, create a sense of place, and assist in the delivery of the economic well-being of the area. This can be achieved by putting assets, particularly those at risk, to an appropriate, viable and sustainable use.
- B. The significance, views, setting, character, appearance and context of heritage assets, both designated and non-designated, should be conserved, especially the key features that contribute to the East Riding's distinctive historic character including:
 - 1. Those elements that contribute to the special interest of Conservation Areas, including the landscape setting, open spaces, key views and vistas, and important unlisted buildings identified as contributing to the significance of each Conservation Area in its appraisal;
 - 2. Listed Buildings and their settings;
 - 3. Historic Parks and Gardens and key views in and out of these landscapes;
 - 4. The dominance of the church towers and spires as one of the defining features of the landscape, such as those of Holderness and the Wolds;
 - 5. Heritage assets associated with the East Yorkshire coast and the foreshore of the Humber Estuary;
 - 6. The historic, archaeological and landscape interest of the Registered Battlefield at Stamford Bridge;
 - 7. The historic cores of medieval settlements, and, where they survive, former medieval open field systems with ridge and furrow cultivation patterns;
 - 8. The nationally important archaeology of the Yorkshire Wolds; and
 - 9. Those parts of the nationally important wetlands where waterlogged archaeological deposits survive.
- C. Development that is likely to cause harm to the significance of a heritage asset will only be granted permission where the public benefits of the proposal outweigh the potential harm. Proposals which would preserve or better reveal the significance of the asset should be treated favourably.

- D. Where development affecting archaeological sites is acceptable in principle, the Council will seek to ensure mitigation of damage through preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development.

22.4.1.2.3 Standards and Guidance

40. Standards and guidance is given by the Government on how the historic environment can be enhanced and conserved through the planning process and several standard and guidance documents have been produced by Historic England and ClfA regarding assessing the Historic Environment and implementing a best practice approach.

Table 22-5 Standards and Guidance

Guidance	Relevance to Assessment
Conserving and enhancing the historic environment (Ministry of Housing, Communities & Local Government (2014, updated 2019)	Sets out advice to ensure the Government's policies on protecting and enhancing the historic environment are understood and followed when making planning decisions. The advice details the main legislative framework for planning and the historic environment, followed by details on how planning decisions should consider the historic environment.
The Historic Environment in Local Plans: Historic Environment Good Practice Advice in Planning 1 (Historic England, 2015a)	Details the processes involved in the decision-making process for the historic environment at a local planning level, providing guidance in implementing the NPPF requirements. Guidance within the document is relevant to ensuring data and documentation for the historic environment is of the standard required.

Guidance	Relevance to Assessment
Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning 2 (Historic England, 2015b)	Provides advice and guidance on assessing the significance of heritage assets, and how to understand the nature, extent and level of significance. It provides guidance on how to understand the impact of a proposed development on the heritage significance of an asset and how to identify ways to avoid, minimise or mitigate that impact which meets the objectives of the NPPF.
The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning 3 (Historic England, 2017a)	Provides guidance on establishing the setting of a heritage asset, how that setting contributes to the asset's significance, and to what extent a proposed development might impact upon an asset's significance.
Standard and guidance for historic environment desk-based assessment (CIfA, 2020)	Provides guidance for the compilation and assessment of baseline historic environment data. It includes guidance on what should and should not be included in a DBA.
Code of Conduct (CIfA, 2014)	Promotes the standards of conduct and self-discipline required of a member in the interests of the public and in pursuit of the study and care of the physical evidence of the human past.
Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC and CIfA, 2021)	Authoritative set of principles that promotes good practice in cultural heritage impact assessment.
Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15 (Historic England, 2021)	Provides guidance on how the historic environment is taken fully into account during the planning and delivery of commercial renewable energy developments.

Guidance	Relevance to Assessment
Preserving Archaeological Remains. Decision-taking for Sites under Development (Historic England, 2016)	Provides guidance on how to retain and protect archaeological sites beneath or within the development. It has a particular focus on decision-taking on waterlogged archaeological sites.
Piling and Archaeology. Guidance and Good Practice (Historic England, 2019)	Provides guidance on how to make clear and informed decisions about piling schemes and their potential impact upon archaeological remains. It provides information on piling types, impacts, and solutions for sustainable foundation design.

22.4.2 Data and Information Sources

22.4.2.1 Site Specific Surveys

41. In order to provide site specific and up to date information on which to base the impact assessment, an assessment of aerial photographic and LiDAR data and historic map regression, a heritage walkover survey and geoarchaeological desk-based assessment were undertaken. An archaeological geophysical survey is ongoing at the time of writing, the results of which will be presented in the ES chapter.
42. The heritage walkover survey was undertaken at targeted locations within the Onshore Development Area to inform the historic environment baseline and to confirm the presence/absence of heritage assets identified on the Humber HER. It consisted of a condition survey to record the extent and level of survival of the structures, earthworks and cropmarks recorded in the Humber HER (**Appendix 22.3**).
43. In total, 80 areas were selected within the Onshore Development Area; however only 63 areas were accessible (or observable from field boundaries or public rights of way) at the time of the survey. Further site visits will be undertaken following the refinement of the Onshore Development Area to incorporate areas where land access was previously restricted (if still required). The heritage walkover survey took place over four days, from 5 to 8 December 2022.

44. The aims of the heritage walkover survey were to:
- Assess the condition of previously recorded upstanding/above ground archaeological remains within the identified areas (i.e. earthworks or structures);
 - Identify any currently unrecorded heritage assets (i.e. earthworks or structures);
 - Inform the potential for currently unknown heritage assets (e.g. buried archaeology) within the Onshore Development Area; and
 - To assess the potential impact from other modern developments within the study areas which may have reduced the significance/preservation of known heritage assets.
45. The aim of the ongoing archaeological geophysical survey is to locate, record and characterise any surviving sub-surface archaeological remains that would enhance current understanding of the archaeological resource within the Onshore Development Area.
46. Two phases of archaeological geophysical survey were proposed, with phase 1 targeting priority areas within the Onshore Development Area such as those within areas of potentially high archaeological sensitivity, areas of permanent above ground infrastructure and engineering ‘pinch-points’. The second phase of survey would follow to cover as much of the Onshore Development Area as possible. However due to land access constraints affecting some of the phase 1 priority areas, the survey is progressing with the phase 2 areas to cover as much of the Onshore Development Area as possible.
47. A total of 25 areas, covering 939.82ha, were identified as requiring a priority (phase 1) archaeological geophysical survey. These areas were targeted based on known locations of recorded heritage assets relating to buried archaeology within the Humber Historic Environment Record (HER) and as identified from aerial photographic data. The 25 areas included possible landfall locations and onshore Substation Zones. The areas were identified using an earlier iteration of the Onshore Development Area which has since undergone further refinement as part of detailed site selection and route refinement works, therefore not all the areas are within the current Onshore Development Area.

48. Up to December 2022, seven phase 1 survey areas were complete or partially complete (due to crop constraints) and a further five land parcels were complete, covering approximately 208ha, a summary of which is presented in section 22.6. The outstanding survey results from the phase 1 and phase 2 surveys will be presented in the ES chapter, depending on land access and ground conditions.

22.4.2.2 Other Available Sources

49. Other sources that have been used to inform the assessment are listed in **Table 22-6**.

Table 22-6 Other Available Data and Information Sources

Data Set	Spatial Coverage	Notes
National Heritage List for England (NHLE)	England	Official, up to date, register of all nationally protected historic buildings and sites in England - listed buildings, scheduled monuments, registered parks and gardens, and battlefields.
Humber Historic Environment Record	East Riding of Yorkshire and Hull	HERs are information services that provide access to comprehensive and dynamic resources relating to the archaeology and historic built environment of a defined geographic area. HERs contain details on local archaeological sites and finds, historic buildings and historic landscapes and are regularly updated.
Conservation Areas	East Riding of Yorkshire	East Riding of Yorkshire Council holds information on Conservation Areas including locally listed buildings.
Relevant Regional, Local and Period Archaeological Studies and Journals	UK	Historic and archaeological data consulted to inform the wider baseline context. The studies / journals consulted do not constitute an exhaustive account of all historical / archaeological data identified within the study area.
The Archaeology Data Service	UK	A non-exhaustive directory of archaeological research consulted to inform the wider baseline context and previous archaeological investigations in the study area.

Data Set	Spatial Coverage	Notes
Cartographic sources (the East Riding Archives, National Mapping Programme and Envirocheck Report)	East Riding of Yorkshire	Historic mapping for the study area including 19th century Enclosure and Tithe maps, and 1st, 2nd and later edition Ordnance Survey maps. Some cartographic data is fragmentary for the study area. This chapter integrates the results of the Map Regression analysis undertaken by Air Photo Services. The full report is included in Appendix 22.2.
Aerial Photographic Data (Historic England Archive and the Humber HER, and ortho-rectified mosaics of vertical aerial photographs at Google Earth)	East Riding of Yorkshire	Aerial photographic data for the study area. This chapter integrates the results of the Aerial Photographic assessment undertaken by Air Photo Services. The full report is included in Appendix 22.2.
Light Detection and Ranging (LiDAR) survey data	East Riding of Yorkshire	Available LiDAR data for the study area. This chapter integrates the results of the LiDAR assessment undertaken by Air Photo Services. The full report is included in Appendix 22.2.
British Geological Survey (BGS) data (surface geology)	UK	Historic borehole logs and wider geological background for the study area. This chapter integrates the results of the GDBA undertaken by AOC Archaeology. The full report is included in Appendix 22.5.
Zone of Theoretical Visibility (ZTV)	Study Area	ZTVs for the permanent above ground infrastructure required by the Projects to inform the initial setting assessments – details of the ZTVs are provided in Chapter 23 Landscape and Visual Impact Assessment.

22.4.3 Impact Assessment Methodology

50. The impact assessment methodology adopted for Onshore Archaeology and Cultural Heritage will define heritage assets and their settings, likely to be impacted by the Projects and will assess the level of any resulting benefit, harm or loss to their significance. The assessment is not limited to direct (physical) impacts, but also assesses possible indirect (physical) impacts upon heritage assets which may arise as a result of changes to hydrological processes and changes to the setting of heritage assets, whether visually, or in the form of noise, dust and vibration, spatial associations and a consideration of historic relationships between places which may impact their significance.
51. **Chapter 6 EIA Methodology** provides a summary of the general impact assessment methodology applied. The following sections describe the specific methods used to assess the likely significant effects on Onshore Archaeology and Cultural Heritage.
52. As set out in Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC and CIfA, 2021), Cultural Heritage Impact Assessment (CHIA) is concerned with “*understanding the consequences of change to cultural significance*”. The principles of assessment are:
 - A. understanding cultural heritage assets; and
 - B. evaluating the consequences of change.
53. Understanding cultural heritage assets distinguishes between:
 - Describing the asset (what it is and what is known about it);
 - Ascribing cultural significance (a description of what is valued about it); and
 - Attributing importance (a scaled measure of the degree to which the cultural significance of that asset should be protected).
54. Evaluating the consequences of change additionally distinguishes between three separate analytical stages:
 - Understanding change (a factual statement of how a proposal would change a cultural heritage asset or its setting, including how it is experienced);
 - Assessing impact (a scaled measure of the degree to which any change would impact on cultural significance); and
 - Weighting the effect (the measure that brings together the magnitude of the impact and the cultural heritage asset’s importance).

55. The three stages of ‘understanding cultural heritage assets’ (a description of the assets and their cultural significance, including the contribution of setting to that significance, and attributing importance) are described in section 22.5 (Existing Environment). An evaluation of the consequences of change is presented in section 22.7 (Assessment of Significance) as set out below.
56. **Chapter 6 EIA Methodology** sets out the following steps in assessing significant effects:
 - Identifying the source of potential impacts and establishing if a pathway exists between the source of the impact and the identified receptors;
 - Identify the sensitivity of each receptor to the relevant impacts;
 - Identify the magnitude of the impact predicted; and
 - Consider the receptor sensitivity and likely impact magnitude, in order to assess the likely significance of effect for the potential impact.
57. The relationship between the CHIA stages and the general impact assessment methodology, as set out in **Chapter 6 EIA Methodology**, is as follows:
58. In CHIA, *identifying the source of potential impacts* is represented by a factual statement of how a proposal would change a cultural heritage asset or its setting (understanding change). It is important to note that change may or may not lead to an impact on cultural significance. If there is a pathway for an impact on cultural significance, this will be articulated for each impact.
59. *Identify the sensitivity* of a receptor equates to the measure of importance ascribed to an asset (or group of assets).
60. The sensitivity of a receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. However, while impacts to a heritage asset’s setting or character can be temporary, impacts which result in damage or destruction of the assets themselves, or their relationship with their wider environment and context, are permanent. Once destroyed an asset cannot recover. On this basis, it is the importance of a heritage asset (as a scaled measure of the degree to which we seek to protect and preserve the cultural significance of that asset through, for example, legislation and planning policy) rather than the sensitivity which forms the basis for assessment.
61. For the purposes of this EIA, the criteria for determining the heritage importance of any relevant heritage assets are described in **Table 22-7**.

Table 22-7 Definition of Importance for Cultural Heritage Assets

Importance	Definition
High	Assets perceived of being of international / national importance including: • World Heritage Sites • Scheduled Monuments • Grade I and II* Listed Buildings or structures • Designated historic landscapes of outstanding interest • Conservation Areas containing buildings or structures with high heritage importance, or high concentrations of listed buildings • Non-designated assets of acknowledged international / national importance • Assets that can contribute significantly to acknowledged international / national research objectives • Assets where the importance / existence / level of survival of the asset has not been ascertained (or fully ascertained / understood) from available evidence and is considered of high importance as a precautionary measure
Medium	Assets perceived of being of regional importance including: • Grade II Listed Buildings or structures • Designated special historic landscapes • Other types and character of Conservation Areas (i.e. not containing buildings or structures with high heritage importance, or high concentrations of listed buildings) • Assets that contribute to regional research objectives • Assets with regional value, educational interest, or cultural appreciation
Low	Assets perceived of being of local importance including: • 'Locally Listed' buildings or structures • Assets that contribute to local research objectives • Assets with local value, educational interest, or cultural appreciation • Assets compromised by poor preservation and / or poor contextual associations

Importance	Definition
Negligible	Assets with no significant value or archaeological / historical interest

62. *Identify the magnitude* of the impact equates to the degree to which cultural significance is positively or negatively changed by the proposal.
63. The magnitude of adverse impact with respect to Onshore Archaeology and Cultural Heritage directly relates to the extent of harm to, or loss of, key elements of the assets cultural significance, which may include its setting. The magnitude of beneficial impact directly relates to the level of public benefit associated with an individual impact. Benefits may correspond directly to the project itself where a project will enhance the historic environment (e.g. through measures which will improve the setting of a heritage asset or public access to it). Alternatively, benefits may occur based on data gathering exercises undertaken for the purpose of a project which will enhance public understanding by adding to the archaeological record (e.g. through the accumulation of publicly available information and data).
64. The criteria used for assessing the magnitude of impact regarding Onshore Archaeology and Cultural Heritage are presented in **Table 22-8**.

Table 22-8 Definition of Magnitude of Impact to Heritage Assets

Magnitude	Definition
High Adverse	Key elements of the asset's fabric and / or setting are lost or fundamentally altered, such that the asset's cultural significance is lost or severely compromised.
Medium Adverse	Elements of the asset's fabric and / or setting which contribute to its significance are affected, but to a more limited extent, resulting in an appreciable but partial loss of the asset's cultural significance.
Low Adverse	Elements of the asset's fabric and / or setting which contribute to its cultural significance are affected, resulting in a slight loss of cultural significance.
Negligible	The asset's fabric and / or setting is changed in ways which do not materially affect its cultural significance.

Magnitude	Definition
Low Beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to a slight loss of cultural significance, are preserved <i>in situ</i>; or Elements of the asset's setting are improved, slightly enhancing its cultural significance; or Research and recording leads to a slight enhancement to the archaeological or historical interest of the asset. This only applies <i>in situations</i> where the asset would not be otherwise harmed i.e. it is not recording in advance of loss.
Medium Beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to an appreciable but partial loss of cultural significance, are preserved <i>in situ</i>; or Elements of the asset's setting are considerably improved, appreciably enhancing its cultural significance; or Research and recording leads to a considerable enhancement to the archaeological or historical interest of the asset. This only applies <i>in situations</i> where the asset would not be otherwise harmed i.e. it is not recording in advance of loss.
High Beneficial	Elements of the asset's physical fabric which would otherwise be lost, severely compromising its cultural significance, are preserved <i>in situ</i>; or Elements of the asset's setting, which were previously lost or unintelligible, are restored, greatly enhancing its cultural significance.
No impact	No change to the assets fabric or setting which affects its cultural significance.

65. The *likely significant effect* is the measure that brings together the magnitude of the impact and the cultural heritage asset's importance to assess the degree to which any change would impact on cultural significance. This measure is indicative of the weight that should be given to the matter in influencing the design of the proposal or, ultimately, in influencing whether the proposal will be acceptable and permitted.

66. The determination of significance is guided using an impact significance matrix presented in **Chapter 6 EIA Methodology**. Definitions for this weighted measure of significance of effect (in EIA terms) are provided in **Table 22-10**. For the purposes of this assessment, any effect that is of major or moderate significance is considered to be significant in EIA terms, whether this be adverse or beneficial. Any effect that has a significance of minor or negligible is not significant. The determination of significance is guided by the use of a significance of effect matrix, as shown in **Table 22-10**.

Table 22-9 Significance of Effect Matrix

		Adverse Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Importance	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Table 22-10 Definition of Effect Significance

Significance	Definition
Major	Change in cultural significance, both adverse or beneficial, which are likely to be important considerations at a national or regional level because they contribute to achieving national or regional objectives. Effective / acceptable mitigation options may still be possible, to offset and / or reduce residual impacts to satisfactory levels.
Moderate	Change in cultural significance, both adverse or beneficial, which are likely to be important considerations at a local level. Effective / acceptable mitigation options may still be possible, to offset and / or reduce residual impacts to satisfactory levels.
Minor	Change in cultural significance, both adverse or beneficial, which may be raised as local issues but are unlikely to be material considerations in the decision-making process. Industry standard mitigation measures may still apply.
Negligible	No material change to cultural significance.
No change	No impact, therefore, no change to cultural significance.

22.4.4 Historic Landscape Character

67. The approach to the assessment of Historic Landscape Character (HLC) differs to that outlined above for heritage assets.
68. The historic character of the landscape is described in terms of ability to accommodate change. For this reason, an approach is required which recognises the dynamic nature of landscape and how all aspects of the landscape, no matter how modern or fragmentary, can form part of the character of that landscape.
69. It is not meaningful, therefore, to assign a level of importance to these aspects of landscape character. Individual elements which contribute towards the HLC of an area (e.g. hedgerows, field boundaries) may, however, be assigned a heritage importance based on the criteria outlined in **Table 22-7** (where relevant).

70. As the HLC is described in terms of ability to accommodate change, it is also not meaningful to assign a measure of magnitude in order to understand the nature of the potential changes. Rather, this change is expressed as a narrative description of the landscape character and how it might be affected by the Projects.
71. Regarding the HLC, in terms of assessing the effect, it is the alteration arising from the Projects to the baseline HLC as assessed in this chapter (see section 22.5.12 and **Appendix 22.1**) that is the key focus. In the absence of attributing heritage importance, effects upon the HLC cannot be assessed using the significance matrix presented in **Table 22-9**, but is rather expressed in terms of the ability of the HLC to accommodate any change arising from the Projects.
72. In this respect, while damage to, or destruction of, a heritage asset is considered permanent and irreversible, effects to HLC are dynamic, and may be temporary and reversible. Certain elements/features that may be considered to contribute to the HLC of an area (e.g. hedgerows, field/parish boundaries) may nonetheless be considered in relation to the process outlined above, as and where relevant.

22.4.5 Cumulative Effect Assessment Methodology

73. The CEA considers other plans and projects that may result in cumulative effects with the Projects. **Chapter 6 EIA Methodology** provides details of the general framework and approach to the CEA that will be undertaken for the Projects.
74. The final assessment of cumulative effects will be undertaken during the later stages of the EIA, once further information is available on a number of projects such as the Outer Dowsing Offshore Wind Farm, Hornsea Project Four decision and the Sheringham Shoal and Dudgeon Extension Projects examination. However, for the purposes of the PEIR, it is possible to identify a number of projects and plans which are likely to feature in that assessment and consider the extent to which cumulative effects might arise. Section 22.7 presents the following preliminary information regarding cumulative effects:
 - Screening for cumulative effects; and
 - A preliminary short list of plans and projects considered for CEA, including a brief description as to how projects have been screened in and the initial tier level they have been assigned.

22.4.6 Transboundary Effects Assessment Methodology

75. There are no transboundary effects anticipated resulting from the Projects with respect to Onshore Archaeology and Cultural Heritage.

22.4.7 Assumptions and Limitations

76. This preliminary assessment is considered to be an interim stage in the EIA process. The results presented in the following sections are based on early design assumptions and initial assessments which will be refined and presented in the final ES to be submitted as part of the DCO application.
77. Data used to compile this PEIR chapter primarily consist of secondary information derived from a variety of sources. The assumption is made that the secondary data, as well as those derived from other secondary sources, are reasonably accurate.
78. The records held by the sources used in this assessment are not a record of all surviving heritage assets, rather a record of the discovery of a range of archaeological and historical components of the historic environment for the study areas. The information held within these sources is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.
79. At this stage, the archaeological geophysical surveys and heritage setting assessment are ongoing and are reported only in part in this chapter. The full details of the findings from these ongoing surveys and assessments will be presented within the ES chapter submitted as part of the final DCO application.

22.5 Existing Environment

22.5.1 Introduction

80. The following section provides a summary of the known and potential onshore archaeological and cultural heritage resource within the defined study areas.
81. The baseline environment as presented below has been, to date, informed by the baseline data and information gathering exercise and assessment undertaken as part of the ADBA (**Appendix 22.1**) and the Aerial Photographic, LiDAR and Map Regression Analysis (**Appendix 22.2**).
82. Site visits have been undertaken to inform the initial heritage setting assessment exercise and establish the condition of extant historic earthworks and structures (**Appendix 22.3** and **Appendix 22.4**). In addition, a Geoarchaeological DBA (**Appendix 22.5**) and the results of the Geophysical Survey (**Appendix 22.6**) also inform this baseline section.
83. The archaeological periods referred to in this chapter are broadly defined by the following date ranges:
- Palaeolithic: 960,000 BP – 8,500 BC;
 - Mesolithic: 8,500 – 4,000 BC;
 - Neolithic: 4,000 – 2,200 BC;
 - Bronze Age: 2,200 – 700 BC;
 - Iron Age: 700 BC – AD 43;
 - Romano-British: AD 43 – 410;
 - Early medieval (Saxon): AD 410 – 1066;
 - Medieval: AD 1066 – 1499;
 - Post-medieval: AD 1500 – 1899; and
 - Modern: AD 1900 – present day.

22.5.2 Designated Heritage Assets

84. There are 614 designated heritage assets within the Designated Heritage Assets Study Area:
- 35 scheduled monuments;
 - 566 listed buildings;
 - Two registered parks and gardens; and
 - 13 conservation areas.
85. All designated heritage assets have been compiled into a gazetteer (**Annex 22.1.1** of **Appendix 22.1**) and are presented on **Figures 22-1-2a-c** of **Appendix 22.1**.
86. There no designated heritage assets located within the Onshore Development Area.

22.5.2.1 Heritage Importance

87. Based on the criteria in **Table 22-7**, the designated heritage assets outlined in section 22.7 are considered to be assets of medium or high heritage importance with perceived regional or national importance (**Annex 22.1.1** of **Appendix 22.1**).

22.5.3 Non-Designated Heritage Assets

88. The details of the historic environment baseline for the Projects has been summarised below from the ADBA (**Appendix 22.1**).
89. All Humber HER data has been compiled into a gazetteer (see **Annex 22.2.2** and **Figure 22.1.3a-i** of **Appendix 22.1**). The sub-sections below identify the known remains most relevant to the study area with additional information provided where available. This comes from archaeological reports, HER event record data, data held on the ADS and the National Mapping Programme.

90. There are 395 non-designated heritage assets within the Non-Designated Heritage Assets Study Area. These are summarised as:
- 12 Prehistoric (undefined);
 - Two Palaeolithic;
 - One Mesolithic;
 - Eight Neolithic;
 - 16 Bronze Age;
 - 18 Iron Age;
 - 11 Roman;
 - One Early Medieval;
 - 70 Medieval;
 - 139 Post Medieval;
 - 57 Modern; and
 - 59 Undated.
91. Of these records, 57 are located within the Onshore Development Area. Non-designated heritage assets potentially subject to direct physical impacts are confined to the Onshore Development Area. These may comprise potential subsurface archaeological remains and above ground heritage assets (e.g. earthworks or structures).
92. Non-designated heritage assets which may be subject to indirect physical or non-physical impacts (associated with change in setting) as a result of the Projects may be either within or beyond the parameters of the Onshore Development Area.

22.5.3.1 Palaeolithic

93. Within the non-designated heritage assets study area there are two Palaeolithic records comprising a findspot and a monument; Palaeolithic flint (17601) was recorded c.22km northwest of the Onshore Development Area, and parallel ditches, west of Meaux Lane (MHU15410) were recorded c.155m southeast of the Onshore Development Area.

22.5.3.2 Mesolithic

94. There are two Mesolithic records within the non-designated heritage assets study area, including finds of a Mesolithic axe and core (8947) located c. 300m northwest of the Onshore Development Area

95. The site of Withow Mere (3862) containing finds of Mesolithic and later date is located within the Onshore Development Area. The mere has been largely eroded by the sea during the post-medieval period, except for the west end and part of the lake bed. This is now on the foreshore and occasionally exposed. It is also designated as a Site of Special Scientific Interest (SSSI).

22.5.3.3 Neolithic

96. Within the non-designated heritage assets study area there are eight Neolithic records of which four are located within the Onshore Development Area. These are 20109, 6625, 8435 and 9001.
97. Record 6625 comprises the site of a possible henge, not visible on any aerial photographs. It is located within Substation Zone 1. A Neolithic axehead (20109) which is now on display in Hull Museum was also found within in the Onshore Development Area approximately 740m south of Substation Zone 1.
98. A Neolithic flint axe (8435) was identified east of Eske Manor. It was found within the proposed onshore export cable corridor.
99. Record 9001 comprises carved wooden rods and stakes of early Neolithic date found in carr peats exposed at Withow Mere. One of these, dates to around 4770 BP. They were presumably associated with wooden trackways or platforms. Activity suggested to be contemporary with the Neolithic. It is located in the nearshore area of the proposed onshore export cable corridor.
100. The remaining records comprise earthworks and flint artefacts.

22.5.3.4 Bronze Age

101. There are 16 Bronze Age records within non-designated heritage assets study area, two of which are located within the Onshore Development Area. This includes record 3407, a debased Bronze Age beaker found within the southern landfall area, and record 9005, a socketed axe found within the onshore export cable corridor.
102. The remaining records comprise earthworks largely visible as cropmarks and chance finds such as axeheads and spearheads.

22.5.3.5 Iron Age

103. Within the non-designated heritage assets study area there are 18 Iron Age records, four of which are located within the Onshore Development Area. These are 1497, 3591, 17944 and 22092.

- 104. Aerial photographs show cropmarks (1497) of at least 16 ditched squares contained within field ditches which seem to be later and are aligned in part on a ring ditch. These are interpreted as a barrow cemetery.
- 105. 3591 is the site of a large polygonal enclosure with an associated irregular field system fragment located within the Onshore Cable Corridor. 17944 comprises a cropmark complex at Bowlams also located within the onshore export cable corridor.
- 106. 22092 comprises a rectilinear enclosure and an abutting field boundary believed to be of Iron Age to Romano British date identified on aerial photographs.
- 107. The remaining records largely comprise earthworks primarily visible as cropmarks on aerial photographs.

22.5.3.6 Prehistoric (undefined)

- 108. Within the non-designated heritage assets study area there are 12 Prehistoric records, six of which are located within the Onshore Development Area and detailed below.
- 109. Record 21216 comprises an undated scraper found in till at Skipsea collected during fieldwalking by Humber Wetlands Project, south-west of Withow Mere. Similarly, an undated flint chunk and flake (21217) were collected during the same fieldwalking survey north-east of Skipsea Grange.
- 110. Record 3413 comprises an undated bone spear found in the cliffs at Skipsea where the remains of deer had also been found.
- 111. In 1894, the end of an artificially pointed stake (8849) was found at a depth of 4ft in the Skipsea lacustrine deposit. It was found at an angle of 45 degrees beneath a mass of twigs and brushwood.
- 112. Record 8977 comprises an unidentified prehistoric amber object found on the Skipsea coast, while record 9004 consists of a stone axe found at Eske.
- 113. The remaining records largely comprise prehistoric artefacts and earthworks located outside the Onshore Development Area.

22.5.3.7 Roman

- 114. Within the non-designated heritage assets study area there are 11 Roman records, all of these are located outside the Onshore Development Area. These largely comprise finds of coins, pottery and several ditched enclosures.

22.5.3.8 Early Medieval

115. A single early medieval HER record has been identified within the non-designated heritage assets study area. This comprises the deserted village of High Skirlington (133). High Skirlington is mentioned in Domesday so assumed to have existed prior to this. In 1228 the village appears to have consisted of a capital messuage and six tofts. By the late 17th century, it was reduced to one messuage, one cottage, one toft and one garden. Aerial photographs show a small village site with a clear rectangular pattern. The site is located c.270m southeast of the Onshore Development Area.
116. A search of the Portable Antiquities Scheme (PAS) shows a large number of early-medieval coins have been found in High Skirlington, suggesting more extensive activity from this period than suggested by the Humber HER records.

22.5.3.9 Medieval

117. Within the non-designated heritage assets study area there are 71 medieval records, of these only five are located within the Onshore Development Area which are outlined below.
118. Record 21207 comprises ridge-and-furrow visible as earthworks and cropmarks on aerial photographs east and northeast of Skipsea village. Nearly all the earthworks appear as cropmarks or to be no longer extant on the 1992 OS vertical photography. Similar earthworks and cropmarks (21219) are visible on aerial photography southeast of Skipsea. These were not visible in 2009 so are presumed to have been ploughed out.
119. Aerial photographs show the cropmarks (MHU982) of Nunkeeling deserted medieval village (DMV). Four records are located close to this record and are all associated with Nunkeeling DMV. These include Nunkeeling Priory (989), the site of Nunkeeling moated manor house (MHU988), the remains of a wayside cross (MHU997) and the site of a possible moated site south of Nunkeeling (MHU987).
120. Record 8683 comprises a deer leap, south of Burton Bushes.
121. Aerial photographs show cropmarks of a ploughed down moated site (2574) south of Catfoss Drain, with an old track to the east, heading north to south, and a further track fragment north of the moat.
122. The remaining Humber HER records outside the Onshore Development Area but within the study area largely comprise moated sites, DMVs, chance finds of coins, seal matrices, pottery brooches, ring etc. There are also several records pertaining to churches, trackways and earthworks.

22.5.3.10 Post-Medieval

123. Within the non-designated heritage assets study area there are 139 post-medieval records of which seven are located within the Onshore Development Area. They comprise:
- 12994 - pump, northeast of model farm, Bentley;
 - 13025 - the site of a shepherd hut, near Bentley;
 - 13026 - a well, northwest of the Shepherd Hut, near Bentley;
 - 13031 - milestone on York Road;
 - 13102 - South Bullock pumping station;
 - 13104 - site of saltings at Eske; and
 - 13271 - old course of Holderness drain.
124. The majority of the records located outside the Onshore Development Area relate to historic buildings or structures, such as farmsteads, windmills, watermills, public houses, blacksmiths, previous toll roads or turnpikes.

22.5.3.11 Modern

125. There are 57 modern records within the non-designated heritage assets study area of which ten are located within the Onshore Development Area. These are:
- 18422 - WWII pillbox recorded within the southern landfall area;
 - 18424 - site of WWII decoy, east of Dunnington Lane within the onshore cable corridor;
 - 18425 - site of WWII decoy, west of Routh within the onshore cable corridor;
 - 18429 - WWII pillbox recorded within the northern landfall area.;
 - 21208 - four WWII bomb craters recorded within the northern landfall;
 - 21215 - WWII military coastal defences in the form of barbed wire obstructions, minefield, aircraft obstruction and weapons pits recorded within the southern landfall area;
 - 21240 - a square pillbox constructed on the line of a field boundary ditch to the east of two earlier weapons pits recorded within the southern landfall area;
 - 9990 - WWII pillbox, surrounding barbed wire obstruction, a trackway, a trench, two potential weapons pits and bomb craters are recorded within the northern landfall area;

- 9992 - WWII lozenge-shaped pillbox with rear blast wall recorded within the northern landfall area; and
 - MHU21210 - WWII Diver AA battery located immediately east of Southfield House, replacing an earlier pillbox, is recorded within the onshore cable corridor.
126. The remaining records largely comprise military installations such as pillboxes and bunkers.

22.5.3.12 Undated

127. There are 59 undated records within the non-designated heritage assets study area, of which 16 are located within the Onshore Development Area. These include:
- Record 10203 comprises a possible enclosure visible as a vague cropmark of a square feature and possible ridge and furrow recorded to the northwest of Long Riston;
 - Record 13001 consists of a pump and well, south of Vinegar Hill. "Pump" is also printed and shown on the 1855 and 1893 OS maps;
 - Two ring ditches (1495) are visible on aerial photographs as cropmarks measuring 36m diameter and 10m diameter, south of substation zone 1;
 - An aerial photograph shows a group of fragmentary enclosures (1507) to the west of Victoria Barracks;
 - Several ditches (19050) are located, north of Meaux Lane;
 - Record 17560 is described as 'Reserved' with no further information;
 - Record 19090 comprises ring ditches visible on aerial photography as cropmarks south of Routh;
 - Record 19339 comprises Ladies Fields enclosure northwest of Low Bonwick;
 - A possible linear cropmark (19463) is visible on aerial photography to the northeast of Catfoss Grange;
 - Within the southern landfall area, record 3409 comprises a prominent bank, possibly flanked by shallow ditches, running east to west, and parallel to field boundaries to the north and south;
 - The site of a fragmentary field system (3590) is present to the east of Riston Grange and is visible as cropmarks;
 - To the south of substation zone 1 is record 3530 which comprises rectangular enclosures and field boundaries;

- Record 3597 comprises a supposed ancient enclosure rising to about 20ft or 25ft at Coneygarths at the edge of Riston Carrs. Mentioned in 1315, it had the appearance of having had buildings on it at the time of the enclosure in 1772, as well as a group of decayed trees;
 - Aerial photographs show cropmarks of fragments of a ditch system (3628) at Riston Carr;
 - Aerial photograph shows cropmarks of a linear bank and ditch (MHU596), possibly a dyke, at Killingwoldgraves; and
 - Record 8840 comprises a trackway and other cropmarks at Routh Carrs.
128. The remaining records are located outside of the Onshore Development Area and largely comprise undated earthworks and cropmarks.

22.5.3.13 Previous Archaeological Investigations

129. The Humber HER records several archaeological investigations have taken place within the non-designated heritage assets study area, some of which are already detailed above under each relevant period; therefore, this section provides a brief summary of the nature and type of assessments/surveys undertaken which have informed the known archaeological record and therefore enhanced our understanding of the historic environment in this area.
130. Archaeological monitoring (EHU1975) was undertaken during the topsoil strip of the Keldgate to Beverley water pipeline, which crosses the Onshore Development Area. Extant ridge and furrow was identified, possibly belonging to the open field system of Bentley medieval village. An earlier alignment of Coppleflat Lane was identified along with 40 tree boles associated with the clearance of Bentley Moor Wood, 30 years earlier. An area of burnt deposits was identified along with a modern pit. Environmental samples from these two features identified burnt oak and may relate to the clearance of the woodland. A series of flints including a Bronze Age core and scraper, were recovered from the topsoil. Along with medieval to post medieval pottery.
131. A geophysical survey (EHU3317) was undertaken on land to the south of Minster Way, Beverley, prior to proposed development. The survey showed several linear anomalies and an area of disturbance, west of the Beverley Growth Pipeline Scheme. These were identified as possibly relating to a drainage system recorded on the 1855 First Edition Ordnance Survey. One alignment was of regularly spaced anomalies and may indicate ridge and furrow. This was partially located within Substation Zone 1.

132. An archaeological and condition survey (EHU2515) was undertaken at the Anti-Aircraft gunsite 350m west of Butt Farm (SM 1019186) near Walkington.
133. A geophysical survey (EHU658) was undertaken on the site of Nunkeeling Priory in advance of a proposed dwelling, c.25m southwest of the Onshore Development Area. Two areas were surveyed using both resistance and magnetic techniques, Areas A and B. The resistance survey in Area A produced a discrete area of high resistance, which may represent foundations associated with a building. There was also a suggestion of a linear high resistance response. No anomalies of archaeological potential were located by the resistance survey in Area B.
134. A watching brief (EHU335) was subsequently undertaken during the groundwork for the construction of a single dwelling on Area B, c.25m west of the Onshore Development Area. The site of the development lies close to the site of the priory founded by the Benedictine Nuns in 1152 AD. No archaeological features were identified, and no finds recovered.
135. Geophysical survey (EHU2664) was undertaken on land at Pastureland House, Bewholme, approximately 40m west of the Onshore Export Cable Corridor. The results revealed several anomalies of potential archaeological interest, comprising six pit-like features and several linear features that may represent field boundary ditches and modern drains.
136. The remaining event records are summarised in **Appendix 22.1**.
137. Recent archaeological work relating the onshore elements of Hornsea Project Four and Dogger Bank A & B (which are not yet updated within the HER) have further characterised the archaeological resource in East Yorkshire through desk-based research, and archaeological fieldwork (Orsted 2021).

22.5.4 APS Assessment of Aerial Imagery

138. The assessment of aerial imagery undertaken by APS has identified 101 areas of archaeological interest within the Onshore Development Area. Below is a summary of the assessment which identifies the extent of cropmark features identified from aerial imagery. Full details of the assessment and descriptions of the findings are provided in **Appendix 22.2**.
139. The aim of the assessment was to provide information on the location and nature of buried and upstanding archaeological features which are visible on historic aerial photographs, modern aerial and satellite imagery and visualised ALS, also known as LiDAR, to assess the topographic and micro-topographic features within the Onshore Development Area, alongside historic map regression analysis.
140. Aerial photographs and LiDAR survey data gathered between the 1940s and the present time show a former landscape of buried eroded funerary, settlement, access and agricultural features which are mainly visible on the lighter soils.
141. It is likely that the below-ground archaeological deposits which cause the marks in crops and grass in this area are more extensive, both horizontally and vertically, than shown via the aerial imagery. Absence of cropmark evidence does not necessarily indicate an absence of archaeological deposits in apparently blank areas.
142. Features dating to the prehistoric, Roman, medieval, Post Medieval and Modern periods have been identified and mapped. Some of these features have been previously identified by the Humber HER and Humber NMP survey.
143. The separation of dating into specific periods of prehistory and history can only be confirmed by ground-based or documentary analyses, but some dating evidence for sites within the APS Site has been proposed by the Humber HER and NMP and by observation of morphological characteristics of cropmarked sites.
144. From an aerial perspective, this landscape may be analysed in a 'living' manner as one which developed over time and contains many multi-period elements. These will be more deeply stratified and extensive below the ground than is apparent in the results of the survey. The remains visible as cropmarks are all likely to have been impacted by agricultural cultivation, to some degree, and retain minimal or no micro-topographic features visible on the ground surface.

145. The extensive WWII defensive features have been greatly reduced by their dismantlement and by marine erosion, but some of the concrete structures are still in place.

22.5.5 Heritage Walkover Survey

146. The heritage assets visited as part of the walkover survey included a total of 46 areas of potential earthworks and structures at the landfall, 11 areas of potential earthworks and structures along the Onshore Export Cable Corridor and six areas of potential earthworks and structures located within and near to the Substation Zones.
147. The heritage walkover survey confirmed the presence of three areas as containing extant historic earthworks, albeit to varying degrees. These are:
- 21210 - WWII Diver AA battery;
 - MHU982 – Nunkeeling DMV; and
 - 19463 - undated linear cropmark, northeast of Catfoss Grange.
148. These earthworks were only visible as slight undulations within the landscape and were not particularly definitive as archaeological features (21210 and 19463). This is with the exception of Nunkeeling DMV (MHU982) where the earthworks were in very good condition.
149. Five extant historic structures were also observed, all of which are WWII pillboxes located within the landfall areas (21240, 18422, 9990, 9991 and 9992).
150. In the areas where historic structures survive as above ground heritage assets, it was noted that the heritage assets were in generally good condition, such as the stone-lined well observed at Nunkeeling DNV (MHU982) and five of the nine pillboxes observed (MHU21240, MHU18422, MHU9990, MHU9991 and MHU9992).

22.5.6 Archaeological Geophysical Survey

151. The following is a summary of the archaeological geophysical survey results recorded up to December 2022. This includes full or partial coverage of seven Priority Areas (PAs). Full interpretations of the geophysical survey results is provided in **Appendix 22.6**.
152. Within Landfall Zone 9 (PA2 and PA4) a fragmentary circular anomaly enclosed by a rectangular enclosure has been recorded. Several Discrete areas of strongly enhanced magnetic response have been recorded which corresponds with Humber HER entries for WWII pillboxes, trackway, and gun emplacement. Parallel trends indicative of extensive ridge and furrow cultivation have been detected across most of the survey areas.
153. At Nunkeeling within PA9, linear trends have been detected which correspond with extant earthworks associated with the Nunkeeling DMV (MHU982) in the north of the area. Several additional linear trends and areas of increased magnetic enhancement have been detected further to the south. It is likely that these are associated with the DMV to the north and the site of Nunkeeling Priory (MHU989) to the west. However, the responses are poorly defined against an elevated level of background response. A potential triple dyke feature is recorded further to the south and east on a northeast-southwest alignment, although a more recent agricultural or natural origin cannot be excluded.
154. Within PA15 to the west of Routh, possible archaeological anomalies have been recorded although due to the elevated level of background response due to natural geology and pedological variations, interpretations have been made with caution. A positive trend however within the east of survey may be associated with the Iron Age or Romano-British enclosures and field boundaries recorded as cropmarks to the southwest (22251)
155. To the north of Tickton within PA16, several linear trends of possible archaeological origin have been detected although they may also indicate different phases of drainage.
156. Within PA17, to the northwest of Beverley, the survey area is dominated by ridge and furrow. A possible prehistoric field system was detected within the northwest and southwest of the survey area, as well as a series of possible enclosures or field systems within the west of the survey area.

157. At Substation Zone 1, within PA24, a very well-defined circular anomaly of possible archaeological origin has been detected in the southeast of the survey area, measuring approximately 30m in diameter. It appears to be associated with an extant feature and an area of likely modern disturbance which might suggest a more recent origin, potentially associated with WWII infrastructure.
158. At Substation Zone 4, within PA25, a positively enhanced circular anomaly with short linear trends was detected in the south of the survey area. The anomalies show excellent correlation with an Iron Age / Roman round house recorded as a cropmark by NMP. Additional linear and rectilinear trends, suggesting enclosures, have been detected 100m to the west. These also show excellent correlation with an Iron Age / Roman rectilinear enclosure recorded by NMP. However, the gradiometer anomalies are not as extensive as the recorded cropmark features.
159. The programme of archaeological geophysical survey is ongoing and is expected to further inform an understanding of the sub-surface archaeological potential of the final DCO application boundary. The final survey results will be incorporated into the ES submitted with the final DCO application.

22.5.7 Potential Sub-surface Archaeological Remains

160. Heritage assets located within or partly within the Onshore Development Area that are considered to potentially represent surviving below ground archaeological remains have not yet been fully evaluated through non-intrusive and intrusive (e.g. geophysical survey and trial trenching) evaluation approaches.
161. A summary of the sub-surface archaeological remains identified within the Onshore Development Area from the desk-based and non-intrusive surveys (completed as of December 2022) is presented in **Table 22-11** and shown in **Appendix 22.6**.

Table 22-11 Summary of Potential Archaeological Remains Identified to Date

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
Landfall Zone 8 (including access)				
MHU21209	N/A	N/A	WWII observation post with loopholes on cliff edge, east of Skipsea. Still visible on the beach in 2009, but in poor condition.	Negligible as no longer extant
MHU18429	N/A	N/A	WWII pillbox visible on Aerial Photographs (APs). Now on the beach in poor condition in 2009.	Negligible as no longer extant
MHU21232	N/A	N/A	Possible large pit in cliff section. Fill cut by modern field drain.	Negligible as no longer extant
MHU21245	N/A	N/A	WWII concrete posts, probably anti-aircraft landing obstacles.	Negligible as no longer extant
MHU21246	N/A	N/A	Remains of WWII pillbox.	Negligible as no longer extant
MHU21231	N/A	N/A	Ditch approximately 1m wide seen in cliff section. Grey fill containing some gravel.	Low
MHU21208	APS_084	N/A	Four WWII bomb craters visible as a row of earthworks on an east to west alignment on APs. Not visible in 2009 and now infilled and not visible via visualised LiDAR data.	Low
MHU21233	APS_091	N/A	WWII eared pillbox on the beach, largely broken up and presumably originally on the cliff.	Negligible as mostly destroyed and now on beach
MHU21207	N/A	N/A	Medieval/post-medieval ridge and furrow visible as earthworks and cropmarks on APs east and north-east of Skipsea village. Nearly all of this appears as cropmarks or to be no longer extant on the latest 1992 OS vertical photography. Mostly not visible in 2009.	Low
MHU21228	N/A	N/A	Possible double ditch seen in a landslip in the cliff section, containing light brown soil fill.	Negligible as no longer present
MHU21248	N/A	N/A	Remains of WWII pillbox.	Negligible as no longer extant
MHU15032	N/A	N/A	Farmhouse likely dating to the 19 th century. On cliff edge in derelict condition in 2009 and in imminent danger of collapse.	Negligible as no longer extant
MHU21192	APS_81	N/A	WWII military camp consisting of military buildings and a weapons pit are visible on APs. Due to coastal erosion part of the monument no longer survives in situ. Some of the structures within the camp may be pre-existing buildings. WWII	Negligible as no longer extant
N/A	APS_080	N/A	A large area of eroded Medieval / Post Medieval ridge and furrow.	Low
MHU21202	N/A	N/A	Three fragments of concrete WWII anti-tank wall.	Negligible

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU21182	N/A	N/A	A flint, and a sherd of abraded grey pottery (Skipsea-53), recovered from the sea shore during fieldwalking.	Negligible
MHU18037	N/A	N/A	Prehistoric animal bone recovered from organic deposit, Ulrome cliffs.	Negligible
MHU21180	N/A	N/A	Site of WWII military building visible as a structure on APs. No longer in situ. Confirmed destroyed by 2009.	Negligible
MHU20667	N/A	N/A	Findspot of a possible stone axe found at Skipsea cliff where the road ends.	Negligible
MHU16379	N/A	N/A	Bronze Age animal horns.	Negligible
MHU21247	N/A	N/A	Remains of WWII gunhouse.	Negligible as no longer extant
MHU21227	N/A	N/A	Large Medieval or Post Medieval pit or ditch in the cliff section, sealed by topsoil. Fill contained some gravel.	Negligible as no longer extant
MHU4523	N/A	N/A	Roman coin hoard.	Negligible
MHU21226	N/A	N/A	Shallow Medieval or Post Medieval pit in the cliff section, approximately 3.5m wide, sealed by topsoil.	Low
Landfall Zone 9 (including access)				
MHU21218	N/A	N/A	WWII military coastal defences in the form of a tank trap comprising concrete cubes are visible as structures on APs. Not visible in 2009, presumed destroyed unless buried by beach sand.	Low
MHU8838	N/A	N/A	Site of Withow Hamlet	Low to medium
MHU3407	N/A	N/A	A debased Bronze Age beaker with rough incised ornament from Withow Peat Bog.	Negligible
MHU3413	N/A	N/A	An undated bone spear found in the cliffs at Skipsea where the remains of deer had also been found.	Negligible
MHU8849	N/A	N/A	End of a stake, artificially pointed, was found at a depth of 4ft in the Skipsea lacustrine deposit. Found at an angle of 45 degrees beneath a 1ft thick mass of twigs and brushwood (MHU3404).	Negligible
MHU8977	N/A	N/A	Unidentified prehistoric amber object found on the coast.	Negligible
MHU21236	N/A	N/A	Possible undated double ditch exposed at an oblique angle in the cliff face.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU21241	N/A	N/A	WWII beach defences consisting of scaffold obstacles.	Negligible as no longer extant
MHU21235	N/A	N/A	WWII beach defence light on the beach. Badly damaged by sea.	Negligible as no longer extant
MHU21242	APS_093	N/A	WWII pillbox roof.	Negligible as mostly destroyed and now on beach
MHU8834	N/A	N/A	Find of Mesolithic elk antlers, Withow Mere.	Medium
MHU21243	APS_093	N/A	Remains of WWII gunhouse.	Negligible as no longer extant
MHU21234	APS_093	N/A	Badly damaged line of WWII concrete anti-tank cubes on a north-south alignment protecting Withow Gap.	Negligible as no longer extant
MHU21223	N/A	N/A	Remains of WWII pillbox on beach, heavily eroded.	Negligible as no longer extant
MHU3862	N/A	N/A	Site of mere containing finds of Mesolithic and later date, and largely eroded by the sea during the post-medieval period, with the exception of the west end and part of the lake bed, now on the foreshore and occasionally exposed.	Medium
MHU9001	N/A	N/A	Carved wooden rods and stakes of early Neolithic age found in carr peats exposed at Withow Mere, one dating to around 4770 BP.	Medium
MHU21215	N/A	N/A	WWII military coastal defences in the form of barbed wire obstructions, minefield, aircraft obstruction and weapons pits visible on APs. No extant above ground remains however possible associated cropmarks.	Low
MHU21216	N/A	N/A	A scraper (Skipsea-2) collected during fieldwalking by Humber Wetlands Project, south-west of Withow Mere.	Negligible
MHU21217	N/A	N/A	Undated chunk and flake (Skipsea-1) collected during fieldwalking by Humber Wetlands Project, north-east of Skipsea Grange.	Negligible
MHU21219	N/A	N/A	Medieval and post-medieval ridge and furrow visible as earthworks and cropmarks on APs southeast of Skipsea village. Not visible in 2009 and presumably ploughed out.	Low
MHU3409	N/A	N/A	A prominent bank, possibly flanked by shallow ditches, approx. 135m long, running east to west, and parallel to field boundaries to the north and south. Rounded off at the west end. The bank tails off at the east end and has been ploughed over.	Low
MHU18422	APS_087 ASP_089	38A	WWII pillbox visible on APs. The pillbox appears to be surrounded by a barbed wire perimeter. Lozenge-shaped pillbox with rear blast wall still visible in field in 2009. In good	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
			condition. The geophysical survey identified an area of strong magnetic response [38A] which coincides with the extant WWII Pillbox.	
N/A	N/A	38B & 38B	Linear trend [38B] identified in the 2022 geophysical survey in the west of the area is believed to be a southward extension of the complex of enclosures detected in Field 28 to the north. The more ephemeral linear trends [38C] in the west of the survey area are also believed to be part of the enclosure complex recorded in Field 28, but they are less well-defined hence their classification as possible archaeology.	Low to high
N/A	N/A	39A & 39B	Fragmentary circular anomaly detected in the 2022 geophysical surveys. The anomaly measures 14m in diameter. 39A appears to be enclosed by a rectangular enclosure [39B] measuring approximately 35m by 45m. Possible prehistoric or potentially associated with WWII structures in the area.	Low to high
N/A	APS_094	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
MHU21266	N/A	N/A	Ditch (undated) seen in cliff face cut by land drain.	Negligible as no longer extant
MHU21268	N/A	N/A	Low-lying deposit recorded in cliff face, consisting of banded organic material recorded over a width of c 20m.	Negligible as no longer extant
MHU21273	APS_097	N/A	Fragments of WWII pillbox.	Negligible as mostly destroyed and now on beach
MHU21259	N/A	N/A	Site of WWII pillbox destroyed by erosion.	Negligible as no longer extant
MHU21256	N/A	N/A	Site of WWII military buildings of unknown function visible as a structure and earthwork on APs. Not visible in 2009, presumed destroyed.	Negligible as no longer extant
MHU19616	N/A	N/A	A late 19 th or early 20 th century timber ship's windlass partly buried in the grass of a caravan park at Hornsea. Not visible in 2009, either removed or destroyed.	Negligible as no longer extant
MHU18741	APS_100	N/A	'Eared' concrete pillbox was of reinforced concrete construction on the beach south-east of Atwick.	Negligible as no longer extant
MHU21274	N/A	N/A	Fragments of WW II lozenge pillbox.	Negligible as mostly destroyed and now on beach
MHU21239	N/A	N/A	Possible buried topsoil with organic deposit in cliff face, exposed by cliff fall.	Low/Negligible as possibly no longer extant

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_096	N/A	Searchlight Battery is visible as an upstanding structure in early 1940s photographs. Removed or destroyed by coastal erosion.	Negligible as no longer extant
N/A	APS_079	N/A	WWII military site consisting of anti-glider ditches, barbed wire fences and weapons pit. All features removed and built over.	Negligible as no longer extant
Onshore Export Cable Corridor				
MHU21210	APS_083	N/A	Site of a WWII Diver AA battery located immediately east of Southfield House, replacing an earlier pillbox. A north-south line of four AA gun positions can be seen, linked by a trackway. Destroyed without trace by 2009.	Low to medium
N/A	APS_078	N/A	Footpath visible as a cropmark on aerial imagery sources.	Low
N/A	APS_077	N/A	An area of eroded Medieval / Post Medieval Ridge and Furrow is visible as microtopography via LiDAR data sources.	Low
N/A	APS_076	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as a cropmark on aerial imagery sources.	Low
MHU19339	N/A	N/A	Rectangular enclosure (undated) recorded in HER as Ladies Fields Enclosure.	Low to medium
N/A	APS_075	N/A	Field boundary visible as a cropmark on aerial imagery sources.	Low
N/A	APS_074	N/A	An area of eroded Medieval / Post Medieval ridge and furrow which is no longer visible as an earthwork on aerial imagery sources.	Low
MHU18424	N/A	N/A	Site of WWII decoy east of Dunnington Lane.	Low
N/A	APS_072	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible on aerial imagery sources.	Low
N/A	APS_071	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as microtopography via LiDAR data sources.	Low
MHU19463	N/A	N/A	Linear cropmark north east of Catfoss Grange.	Low
N/A	APS_070	N/A	The line of a modern service trench which has been identified through aerial imagery sources.	Negligible
N/A	APS_067	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as microtopography via LiDAR data sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU15807	N/A	N/A	Iron Age ditch, drain, pottery and animal bone found during an archaeological watching brief. A ditch was recorded in 2009 and may be identified as a continuation of this feature or related.	Low to medium
N/A	APS_066	N/A	Area of geological disturbance visible on aerial imagery sources.	Negligible
N/A	APS_065	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as a cropmark on aerial imagery sources.	Low
N/A	APS_062	N/A	A former field boundary dating to the Post Medieval period is visible as an earthwork on aerial imagery sources.	Low
N/A	APS_061	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N/A	APS_060	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N/A	APS_058	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as a cropmark on aerial imagery sources.	Low
MHU982	APS_069	123A & 123B	Nunkeeling DMV is recorded within this area as extant earthworks. The 2022 geophysical survey identified linear trends [123A] which correlates with extant earthworks associated with the DMV. A linear zone of negative magnetic enhancement [123B] crosses the centre of the survey area. This may have an archaeological origin associated with the DMV. However, it may be due to an undocumented former field boundary.	Medium to high
N/A	APS_069	129A, 129 B & 129C	The 2022 geophysical survey identified several well-defined linear trends [129A] and more amorphous linear zones of increased magnetic enhancement [129B] within this survey area. It is likely that these are associated with the DMV to the north and the site of Nunkeeling Priory (MHU989) to the west. However, the responses are poorly defined against an elevated level of background response. Several broad areas of magnetic disturbance [129C] are evident in the west of the survey area. These are very well defined and have a general orientation consistent with [129A] and [129B]. They may indicate demolition spreads associated with former structures, or potentially infilled features such as fishponds. However, they may simply be due to spreads of modern material associated with agricultural activity.	Medium to high
N/A	APS_069	135A & 135B	The 2022 geophysical survey identified a short, strong, linear anomaly [135A] in the south of the survey, along the western limits of the area. Although the limited extent of the response makes interpretation cautious, it is likely to be associated with a possible moated site (MHU987) recorded to the west of this location. Some positively enhanced linear trends [135B] have been noted in the northwest of the survey area.	Medium to high

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_054	N/A	Field boundary visible as an extant boundary on aerial imagery sources. No longer present.	Low
N/A	APS_053	N/A	An area of Medieval / Post Medieval ridge and furrow is visible as an eroded residual earthwork on aerial imagery sources.	Low
N/A	APS_052	N/A	Former field Boundary visible as an extant boundary on aerial imagery sources. No longer present.	Low
N/A	APS_051	N/A	Ditch visible as a cropmark on aerial imagery sources.	Low
N/A	APS_050	N/A	Field boundary visible as cropmark on aerial imagery sources.	Low
N/A	APS_048	N/A	A pit of unknown date is visible as a cropmark on aerial imagery sources.	Low
N/A	APS_046	N/A	An area of eroded Medieval / Post Medieval ridge and furrow is visible as a cropmark on aerial imagery sources.	Low
MHU17944	APS_059	N/A	Cropmark complex	Low to high
N/A	APS_045	N/A	Field boundary visible as an extant boundary on aerial imagery sources. No longer present.	Low
MHU3590	N/A	N/A	Field System, east of Riston Grange.	Low to medium
MHU10203	N/A	N/A	Possible enclosure.	Low to medium
N/A	APS_044	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
MHU3597	APS_057	N/A	An ancient enclosure rising to about 20ft or 25ft at Coneygarths at the edge of Riston Carrs. Mentioned in 1315, it had the appearance of having had buildings on it at the time of the enclosure in 1772, as well as a group of decayed trees. The only trace of an artificial feature is a rectangular tree enclosure 23m north to south by 12m east to west formed by a shallow ditch about 0.3m deep and 1.5m across, as shown on the 25" map. The ditch and escarpment mentioned are natural.	Low to medium
MHU3628	N/A	N/A	Fragments of a ditch system visible as cropmarks.	Low to medium
MHU3591	N/A	N/A	Enclosure, field system.	Low to medium
MHU8840	APS_056	N/A	Trackway and other cropmarks.	Low to medium
N/A	APS_042	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_041	N/A	A ditch orientated approximately north-south which is visible as a cropmark and has been identified through aerial imagery sources.	Low
MHU22092	N/A	N/A	A small rectilinear enclosure and abutting field boundary ditch are visible as cropmarks on 2011 APs. The features appear to show no similarity in alignment to known Medieval/Post Medieval activity in the immediate vicinity. Possibly dating to Iron Age or Roman periods.	Low to medium
MHU19050	N/A	N/A	Ditches north of Meaux Lane.	Low
N/A	APS_040	N/A	An area of eroded Medieval / Post Medieval ridge and furrow which is orientated approximately north-south and is visible as earthworks and cropmarks on aerial imagery sources.	Low
MHU19090	N/A	N/A	Possible ring ditches located west of the church.	Low to high
N/A	N/A	315A	The 2022 geophysical survey identified a linear trend [315A] running through the centre of the survey area. This has been noted as having a possible archaeological origin due to its nature and form, but it may have an agricultural origin.	Low to medium
N/A	N/A	296A	The 2022 geophysical survey identified a curving negative trend [296A] in the west of the survey area. This has been noted as possible archaeology due to its form, but it may have a natural origin.	Low to medium
MHU18425	N/A	N/A	Site of WWII decoy west of Routh.	Low
N/A	N/A	291A	The 2022 geophysical survey identified a series of short linear anomalies and discrete areas of enhanced magnetism [291A] along the northern limits of the survey area and have been categorised as having a possible archaeological origin.	Low to medium
MHU13271	N/A	N/A	Old course of Holderness drain.	Low
N/A	APS_037	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
MHU8435	N/A	N/A	Flint axe found east of Eske.	Negligible
N/A	APS_036	N/A	The line of a modern service trench which has been identified through aerial imagery sources.	Negligible
N/A	N/A	300A	The 2022 geophysical survey identified several linear trends [300A] and have been categorised as possible archaeology.	Low to medium

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_035	N/A	An area of former field systems and ditches which are visible as cropmarks through aerial imagery sources.	Low to medium
MHU9005	N/A	N/A	Late Bronze Age Socketed Axe, Low Eske.	Negligible
MHU9004	N/A	N/A	Stone Axe (undated) Eske.	Negligible
MHU13104	N/A	N/A	Site of Saltings, Eske.	Low to medium
MHU13102	N/A	N/A	South Bullock Pumping Station.	Low
N/A	APS_033	N/A	Rectilinear ditch visible as a cropmark on aerial imagery sources. Mapped by NMP as Post Medieval field boundary.	Low
N/A	APS_031	N/A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low
MHU1497	N/A	N/A	Square Barrow Cemetery.	Medium to high
MHU1495	N/A	N/A	Two ring ditches.	Low to high
MHU20109	N/A	N/A	Findspot of a Neolithic Axe Head, which is now displayed in Hull Museum. Found in 1999/2000.	Negligible
N/A	APS_027	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N/A	APS_025	N/A	An area of eroded Medieval / Post Medieval ridge and furrow and a former chalk pit.	Low
N/A	APS_024	N/A	Chalk pit visible on aerial imagery sources.	Low
N/A	APS_023	N/A	An area of Medieval / Post Medieval ridge and furrow which is now eroded to microtopography.	Low
N/A	APS_022	N/A	Field boundary visible as cropmark on aerial imagery sources.	Low
N/A	APS_021	N/A	Field boundary visible as cropmark on aerial imagery sources.	Low
N/A	APS_019	N/A	Extractive pit visible as earthwork disturbances on aerial imagery sources. Site now redeveloped as a golf course.	Negligible as no longer extant

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU3530	APS_030	N/A	Rectangular enclosures. Series of cropmark ditches which comprise a settlement site and likely field system including trackways, pits and enclosures visible in aerial photographs, satellite imagery and LiDAR. Previously recorded by NMP.	Low to high
MHU13025	N/A	N/A	Site of shepherd hut.	Low
MHU13026	N/A	N/A	Well, north-west of site of shepherd hut.	Low
N/A	APS_018	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N/A	APS_016	N/A	An area of Medieval / Post Medieval ridge and furrow which is now eroded to microtopography.	Low
N/A	APS_015	N/A	An area of Medieval / Post Medieval ridge and furrow which is now eroded.	Low
N/A	APS_010	N/A	Undated series of parallel east-west aligned sinuous ditches are visible as cropmarks on aerial photographs, satellite imagery and previously mapped by NMP.	Low to medium
MHU13001	N/A	N/A	Pump and well, located south of Vinegar Hill.	Low
N/A	APS_008	N/A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately north-south is visible as eroded earthworks and cropmarks on aerial imagery sources.	Low
N/A	APS_007	N/A	A ditch orientated approximately northeast-southwest which is visible as an earthwork and later as a cropmark has been identified through aerial imagery sources.	Low
MHU1507	N/A	N/A	Enclosures, west of Barracks Site.	Low to high
N/A	APS_006	N/A	A ditch orientated approximately northwest-southeast which was visible as an earthwork has been identified through aerial imagery sources, and is no longer extant.	Low
N/A	APS_005	N/A	A former field boundary dating to the Post Medieval period was visible as an earthwork and was orientated approximately northwest-southeast. The feature has been removed and is no longer present.	Low
N/A	APS_004	N/A	A group of pits of unknown date are visible as cropmarks on aerial imagery sources.	Low to medium
N/A	APS_003	N/A	A bank orientated approximately north-south which is visible as an earthwork has been identified through aerial imagery sources.	Low
N/A	APS_002	N/A	A bank orientated approximately northwest-southeast which is visible as an earthwork and a cropmark has been identified through aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_001	N/A	An area of Medieval / Post Medieval ridge and furrow which is now eroded.	Low
MHU21797	N/A	N/A	Recorded as monument measuring 165m by 437m (no further details are provided).	Low
MHU2574	N/A	N/A	Soilmark of a ploughed down moated site, with an old track to the east, heading north to south, and a further track fragment north of the moat. Aerial photographs show a moat with curved edges and internal features.	Medium to high
N/A	N/A	433A & 433B	The 2022 geophysical survey identified a rectilinear trend [433A] along the southern limits of the area. The nature and form of the anomaly suggests a possible archaeological origin. However, its location at the edge of the survey area complicates interpretation and it may have a natural origin. A linear trend aligned east-west [443B] has been detected in the west of the survey area. This appears to be a continuation of anomalies detected in Field 443 immediately to the east.	Low to medium
N/A	N/A	443A, 443B & 443C	The 2022 geophysical survey identified a series of linear trends [443A] in the northwest of the survey area which appear to form part of a possible prehistoric field system. They are categorised as having a probable archaeological origin due to their character and form. However, no known sites or cropmarks have been recorded within this area. In the western half of the area several weak linear trends [443B] have been detected. These appear to be a continuation of a possible series of enclosures or field systems detected in Field 446 to the west. Two strong parallel trends [443C] have been mapped in the northeast of the survey area. The data suggests a possible trackway, but they may be ploughing headlands associated with the ridge and furrow cultivation.	Low to high
MHU596	N/A	N/A	Bank and ditch, Killingwoldgraves	Low to medium
N/A	N/A	474A, 474B & 474C	The 2022 geophysical survey identified a relatively well defined linear trend [474A] in the northwest of the survey area, probably archaeological in origin. Its form is slightly different to the possible archaeological trends detected in Field 466 to the north increasing confidence in interpretation. Iron Age / Roman cropmarks have been recorded 250m to the southwest. More poorly defined trends have been detected in the north [474B] and south [474C] of the survey area. These have been noted as having a possible archaeological origin but could be due to natural variations.	Low to medium
MHU8683	N/A	N/A	Deer leap, south of Burton Bush.	Low to medium
N/A	N/A	446A	The 2022 geophysical survey identified several weak linear trends [446A]. The data suggests a possible series of enclosures or field systems. They have been categorised as possible, rather than probable, archaeology due to their ephemeral nature and because an agricultural origin cannot be wholly excluded.	Low to medium

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
MHU13031	N/A	N/A	Milestone on York Road.	Low
Substation Zone 1				
MHU17560	N/A	N/A	‘Reserved’ record - findspot	Low
N/A	APS_039	N/A	A partial double ditched enclosure which is visible as a cropmark on aerial imagery sources.	Low to medium
N/A	APS_034	N/A	Former field boundary visible as cropmark on aerial imagery sources.	Low
N/A	APS_032	N/A	A ditch orientated approximately north-south which is visible as a cropmark has been identified through aerial imagery sources.	Low
N/A	APS_043	766A, 766B, 766C, 766E & 766F	Area of ring ditches and enclosures visible as cropmarks. The 2022 geophysical survey identified a positively enhanced circular anomaly [766A] measuring approximately 17m in diameter in the south of the survey area. Short linear trends [766B] have been detected which appear to be associated with the circular anomaly [766A] and are also visible as cropmarks. Linear and rectilinear trends [766C], suggesting enclosures, have been detected along the western limits of the survey area, 100m to the west of [766A]. However, as with the responses, to the east, the gradiometer anomalies are not as extensive as the recorded cropmark features. Additional features [766D, 766E & 766F] are more poorly defined but are of possible archaeological origin.	Low to high
N/A	APS_038	825A	An area of Medieval / Post Medieval ridge and furrow which is orientated approximately east-west, separated by two ditches is visible as an earthwork and later a cropmark on aerial imagery sources. The 2022 geophysical survey identified several positively enhanced linear trends [825A] in the west of the survey area. The form of the responses suggests a possible trackway and associated field divisions. These have been categorised as having a possible archaeological origin, but they could be more recent undocumented features.	Low to medium
N/A	APS_028	N/A	The line of a modern service trench which has been identified through aerial imagery sources.	Negligible
Substation Zone 4				
N/A	APS_026	N/A	An area of eroded Medieval / Post Medieval ridge and furrow.	Low
N/A	APS_020	N/A	An area of Medieval / Post Medieval ridge and furrow is visible as an earthwork on aerial imagery sources.	Low

Humber HER ID	Aerial Imagery Site ID	Geophysical Anomaly ID	Description	Perceived Heritage Importance
N/A	APS_014	N/A	A group of ditches on a variety of orientations have been identified through aerial imagery sources.	Low
N/A	APS_013	N/A	A partial enclosure which is visible as a cropmark on aerial imagery sources.	Low to medium
N/A	APS_012	N/A	Extraction pit visible on aerial imagery sources, which is now infilled and reinstated.	Low
N/A	APS_011	N/A	A group of former field boundaries dating to the Post Medieval period are visible as earthworks and cropmarks on aerial imagery sources.	Low
N/A	N/A	818A	The 2022 geophysical survey identified a very well-defined circular anomaly [818A] in the northwest of the survey area, measuring approximately 30m in diameter. It is noted as possible, rather than probable, archaeology as the form of the response is not entirely consistent with a ring ditch type feature. It appears to be associated with an extant feature and an area of likely modern disturbance which might suggest a more recent origin.	Low to medium

22.5.8 Above Ground Archaeological Remains and Heritage Assets

162. Features considered to represent above ground heritage assets within the Onshore Development Area are summarised in **Table 22-12**.

Table 22-12 Possible Above Ground Heritage Assets Within the Onshore Development Area

Humber HER ID	Aerial Imagery Site ID	Description	Perceived Heritage Importance
Landfall Zone 8			
MHU9992	N/A	WWII pillbox visible on APs. Lozenge-shaped pillbox with rear blast wall still visible in 2009. Now in the centre of a large field.	Low to medium
MHU9990	APS_085	WWII pillbox, surrounding barbed wire obstruction, and a trackway are visible as structures on APs. A trench, two potential weapons pits and bomb craters are also visible as earthworks.	Low to medium
Landfall Zone 9			
MHU21237	N/A	WWII pillbox, now on beach, but originally on cliff. Only partially visible in sand.	Low
MHU21224	N/A	Remains of WWII pillbox on beach, heavily eroded.	Low
MHU21244	N/A	WWII beach obstacle, consisting of a concrete block with 2 steel pipes.	Low
MHU21240	N/A	Square pillbox constructed on the line of a field boundary ditch to the east of two earlier weapons pits but now within an enlarged field.	Low to medium
Onshore Export Cable Corridor			
MHU982	APS_069	Nunkeeling DMV is recorded within this area as extant earthworks.	Medium to high
Substation Zones 1 and 4			
No above ground heritage assets were identified within the Substation Zones.			

163. These heritage assets represent only those within the Onshore Development Area which are considered to represent above ground remains as indicated by descriptive information held by the HER, through the assessment of aerial photographic, LiDAR and historic map analysis (**Appendix 22.2**), and following the heritage walkover survey (**Appendix 22.3**).
164. Those heritage assets which are described as above ground extant structures or earthworks within the HER information but which were found to be no longer extant (due to coastal erosion) during the heritage walkover survey have been retained within **Table 22-11**.
165. It is acknowledged that examples of above ground historic earthworks are a rare resource within Holderness as a result of agricultural activity and as such are considered valuable where they do survive as above ground features.

22.5.9 Archaeological Potential within the Onshore Development Area

166. The overall archaeological potential within the Onshore Development Area, as assessed in the ADBA (**Appendix 22.1**) prior to the assessment of the geophysical survey data, is considered to be moderate, with the following key distinctions drawn out based on information available to date:
 - There is limited potential for encountering archaeology of Palaeolithic date within the Onshore Development Area;
 - Evidence of Mesolithic and Neolithic settlement activity (largely comprising stray finds) is recorded within Landfall Zone 9, mainly on the foreshore, at the site of Withow Mere suggesting a moderate potential for encountering unrecorded assets;
 - Neolithic funerary activity is recorded within Substation Zone 1 and across the surrounding landscape suggesting a moderate to high likelihood for unrecorded assets relating to funerary practice;
 - Evidence for Bronze Age and Iron Age activity is far more common within the Onshore Development Area with settlement activity recorded to the east of Routh and north of Long Riston, as well as evidence for funerary practice to the south-east of Substation Zone 1. Suggesting a moderate to high likelihood for unrecorded assets relating to settlement activity and funerary practice;
 - Roman activity is limited to finds of pottery and a coin hoard along the foreshore although within the study area there is a greater number of likely Roman 'sites' suggesting a moderate to high likelihood for unrecorded assets relating to settlement activity;

- High likelihood of unrecorded assets relating to the medieval period (and potentially the early medieval period) as evidence by the agricultural use of the land and will likely relate to settlement particularly around Nunkeeling, Catfoss and Eske;
 - Unrecorded assets of Post Medieval date are likely to relate to settlement, commerce, agriculture and industry activity concentrated around established villages and towns. Concentrated evidence is noted around Skipsea, Riston Grange, Routh, Hull Bridge and the southern outskirts of Beverley; and
 - Moderate likelihood of surviving unrecorded evidence relating to defensive measures during WWII particularly around the coastal areas.
167. A large number of undated assets including enclosures, ring ditches and field systems are also recorded within the Onshore Development Area which may be of prehistoric or Roman date.
168. The archaeological potential within the Onshore Development Area is based on an assessment of data obtained through an assessment of baseline data gathering and survey campaigns to inform the assessment. As the EIA progresses, ongoing survey work will further inform and add to the archaeological potential within the Onshore Development Area.

22.5.10 Heritage Importance

169. The non-designated heritage assets within the Onshore Development Area (identified to date as part of this assessment) are examples of locally common features representing Medieval / Post Medieval agriculture, and modern military activity. Based on information available to date, these assets may contain evidence that would contribute to understanding the archaeological resource of the local area. They are therefore anticipated to be of low heritage importance.
170. Evidence of the Mesolithic, Neolithic, Bronze Age, Iron Age and Medieval periods has also been recorded across the Onshore Development Area. As well as stray finds and recorded 'sites', these have included earthworks and cropmarks. Given the uncertainty regarding the origin of potential sub-surface archaeological remains of this nature (based on available data), this chapter has been prepared in line with the precautionary principle whereby the highest likely level of importance may be assigned and assessed within section 22.7, as necessary. This precautionary approach represents good practice in archaeological impact assessment and reduces the potential for impacts to be under-estimated.

- 171.** For the previously unrecorded non-designated heritage assets, identified as a result of the analysis of aerial photography, LiDAR data and historic mapping (**Appendix 22.2**) and geophysical survey (**Appendix 22.6**) it has not yet been possible to determine the precise nature, extent or date of these features. It may also be the case that some (or many) of the features prove to be non-archaeological. Given this uncertainty, these potential heritage assets have also been assigned a precautionary heritage importance, where appropriate, depending on the nature of the asset in question, against which potential impacts have been assessed in section 22.7.

22.5.11 Heritage Setting Considerations

- 172.** Designated and non-designated heritage assets have been considered as part of an ongoing heritage setting assessment, the initial results with respect to the Projects' onshore infrastructure are presented in **Appendix 22.4** and shown on **Figure 22-2 and 22-3**.
173. To date 19 heritage assets have been identified where a change in setting could lead to harm to their significance. These are:
- Black Mill (NHLE 1310087 - Grade II Listed Building);
 - Square barrow on Westwood Common, 50m west of Blackmill (NHLE 1013996 - Scheduled Monument);
 - Oval barrow on Westwood Common, 55m northwest of Blackmill (NHLE 1014000 - Scheduled Monument);
 - Bowl barrow on Westwood Common, 150m north of Blackmill (NHLE 1013991 - Scheduled Monument);
 - Square barrow on Westwood Common, 120m south of Blackmill (NHLE 1013995 - Scheduled Monument);
 - Bowl barrow on Westwood Common, 50m north of Blackmill (NHLE 1013992 - Scheduled Monument);
 - Heavy Anti-aircraft gunsite, 350m west of Butt Farm (NHLE 1019186 - Scheduled Monument);
 - Walkington Conservation Area;
 - Beverley sanctuary limit stone, Walkington Cross (NHLE 1012591 - Scheduled Monument);
 - Beverley sanctuary limit stone, Bentley Cross (NHLE 1012590 - Scheduled Monument);
 - Bowl barrow 400m north of Highfield House (NHLE 1007731 - Scheduled Monument);

- The Minster Church of St John (Beverley Minster) (NHLE 1084028 - Grade I Listed Building);
 - Risby Hall (NHLE 1001419 - Grade II Registered Park and Garden);
 - Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument);
 - 'Cellar Heads' moated site and related ridge and furrow earthworks at Risby Park, 700m northwest of Risby Park Farm (NHLE 1015312 - Scheduled Monument);
 - Old Hall (NHLE 1103420 - Grade II Listed Building); and
 - Low Hall (NHLE 1103419, 1310090, 1346992 - Grade II Listed Buildings).
174. As the EIA progresses and the Substation Zones are refined further, a re-evaluation of Step 3 and consideration of Step 4 of the setting assessment will be undertaken and presented as an updated technical appendix to the ES chapter.
175. A setting assessment with respect to the Projects' offshore infrastructure has been scoped out of this assessment due to the distance of the array area (99km) and potential offshore platform (52km) from the coastline. At this distance, changes to setting affecting heritage significance are unlikely to be significant.

22.5.12 Historic Landscape Characterisation

176. The Historic Landscape Character (HLC) data held by the Humber HER has been obtained as it assists in the interpretation of the current landscape's history and evolution and forms an aid to identifying areas of the landscape which may be sensitive to change.
177. The majority of the Projects pass through land broadly identified as Settlement, Woodland or Fields and Enclosures. The woodland is mostly modern plantation, although a few small sections of ancient/semi natural or estate woodland are present. The current field pattern is a result of early and parliamentary planned enclosure. This is unsurprising given the rural agricultural landscape that the Projects pass through. Other entries within the non-designated heritage assets study area describe areas of historic earthworks, such as medieval villages (e.g. Eske DMV, Storkhill and Sandholme).

178. Overall, the HLC data identifies a distinctly rural landscape, the history of which is mostly related to the period of Enclosure (piecemeal and parliamentary). There are links to the earlier history of the landscape, however, with surviving earthworks of medieval villages and medieval moated manors. The route of the Projects pass through fields of distinctly modern agricultural character, with large fields that have developed since the period of Enclosure, most often amalgamated from smaller fields from the mid-20th century onwards.

22.5.13 Geoarchaeological and Palaeoenvironmental Potential

179. A Geoarchaeological Desk-Based Assessment (GDBA) (**Appendix 22.5**) identified deposits of archaeological and geoarchaeological interest within the Onshore Development Area. These include Holocene age alluvial, organic, and lacustrine deposits and colluvium, along with Pleistocene age glaciofluvial deposits and Head. Glacial till is present across the entire Onshore Development Area and whilst it has relatively low geoarchaeological potential, there is evidence near Skipsea of archaeological material being preserved on the surface of the deposit. The boundary between till and overlying deposits is therefore of archaeological interest.
180. Fine-grained alluvium is widespread at the possible landfall locations and between Leven to Woodmansey where the onshore export cable corridor crosses the River Hull valley. Elsewhere, alluvium may be present locally, where it infills depressions in the surface of the underlying Pleistocene deposits or associated with historic or modern river courses. Organic deposits have been recorded at the possible landfall locations and along the banks of the River Hull in the southwest of the Onshore Development Area.
181. Lacustrine deposits have similar characteristics to alluvium and can also contain layers of organic deposits. These were identified at the possible landfall location near Skipsea where they infill depressions in the underlying deposits. These deposits are likely Late Pleistocene to Holocene age and formed when the climate was cool.
182. The alluvial and peat deposits are expected to be Holocene in age and evidence of prehistoric activity may survive beneath these deposits, although a high degree of reworking is expected. The organic deposits may preserve rare examples of wooden structures such as jetties or trackways.

183. Alluvial and lacustrine deposits provide moderate potential for the preservation of palaeoenvironmental proxies (e.g. pollen, ostracods, diatoms) which can be used to reconstruct changes in hydrology, climate, and local ecology, including human influence. Organic deposits within these sequences present moderate to high potential for preservation of proxies such as pollen and plant macrofossils, which can aid in reconstruction of changing environments in the past in relation to human history.
184. There is some potential for colluvium (mixed sediment) to be present at the possible landfall locations. Colluvium has low potential to preserve archaeological or palaeoenvironmental remains, but it may seal and bury earlier archaeology or geoarchaeologically significant deposits.
185. Coarse-grained glaciofluvial deposits that formed in a high energy environment during the last glacial period have moderate potential to preserve Palaeolithic material although if present, remains are likely to have undergone significant erosion. They also have low potential to preserve palaeoenvironmental material. The discovery of prehistoric material associated with these deposits in the vicinity of the possible landfall locations suggest their archaeological potential is high at this location, although there is some uncertainty about the extent of these deposits in the eastern parts of the onshore export cable corridor. Elsewhere, glaciofluvial deposits are present along the margins of the River Hull where they likely represent an earlier phase of river activity adjacent to the modern River Hull. Glaciofluvial deposits are present in southern parts of the onshore export cable corridor but here their potential is more limited.
186. Pleistocene age Head deposits have been mapped by the British Geological Survey (BGS) within the onshore export cable corridor between Beverley and Bentley and also within the substation zones. Head has low to moderate potential to preserve archaeological and palaeoenvironmental remains, but it may seal or bury earlier archaeology.
187. Glacial till is present across the entire Onshore Development Area and whilst it has relatively low geoarchaeological potential, there is evidence near Skipsea of archaeological material being preserved on the surface of the deposit. The boundary between till and overlying deposits is therefore of archaeological interest.

22.5.14 Future Trends

188. If the Projects are not developed, an assessment of future conditions for Onshore Archaeology and Cultural Heritage has been carried out and is described within this section.
189. The historic environment is vulnerable to the effects of climate change. Changes to environmental conditions have the potential to alter the range of flora and fauna within the environment, thereby potentially changing the inherent character of historic and designated landscapes and affecting historic building materials (e.g. fungal / plant growth and insect infestation due to the effects of global warming).
190. Extremes in temperature and cycles of wetting and drying resulting from climate change can also damage historic buildings, landscapes and buried archaeological remains, variously as a result of soil saturation and shrinkage and changes to soil chemistry.
191. Waterlogged archaeological and palaeoenvironmental remains are particularly vulnerable in this regard, with the desiccation of soils and lowered groundwater levels potentially increasing the risk of decay to such remains, if and where present. These damaging cycles create stressful environments for buried archaeology, with preservation *in situ* becoming increasingly difficult. Given that heritage assets, and the contexts in which they survive vary, it follows that multiple factors may affect their survival, stabilisation, or decay. On this basis, broad-scale strategies to safeguard the historic environment from the effects of climate change are therefore difficult to determine, with no one single solution available.
192. Elements of climate change considered to be of relevance to the Onshore Development Area include those associated with sea level change and erosion, which have the potential to damage and de-stabilise coastal heritage assets. In particular, increased frequency and severity of storms, coupled with sea level rise, will likely impact coastal heritage assets and in the medium to long-term, sea-level rise is likely to drive a very significant change. The sub-surface archaeology which is exposed, investigated, and recorded to professional standards may, however, be considered a public benefit in terms of understanding of and building upon the archaeological record, and certainly preferable to assets and remains being lost altogether.

22.6 Ongoing and Forthcoming Programmes of Assessment and Survey

193. In order to further inform the onshore archaeological and cultural heritage baseline environment, the following programmes of assessment and survey are anticipated to inform the archaeological mitigation strategy.

22.6.1 Below Ground Archaeology

194. At the time of writing, the geophysical survey is ongoing with the aim of covering as much of the Onshore Development Area as possible. The results from the survey will be presented in the ES chapter.
195. The information gained from these non-intrusive evaluation surveys will inform a programme of intrusive evaluation investigations (e.g. trial trenching). The primary purpose of programmes of intrusive evaluation will be to ground truth and further identify areas of archaeological interest, to confirm the exact locations of any buried archaeological features which may be extant within the Onshore Development Area, as indicated by the previous non-intrusive survey methods.
196. The information attained from these investigations will inform decisions regarding the archaeological mitigation strategy for the Projects so that the historic environment resource can be safeguarded in a manner that is efficient, appropriate, and proportionate to the significance of the archaeological remains present. Post-consent survey commitments in this regard will be detailed in a project-specific Outline WSI prepared in agreement with the relevant regulators and submitted as part of the final DCO application.

22.6.2 Geoarchaeological and Palaeoenvironmental Remains

197. Additional mitigation with respect to geoarchaeological / palaeoenvironmental remains will commence with a programme of geoarchaeological monitoring of engineering-led GI works with a view to identifying the presence / absence of palaeoenvironmental and geoarchaeological remains / deposits.
198. The results of this assessment will include recommendations for any further geoarchaeological assessments / approaches considered necessary. This will ultimately inform a project-wide approach to geoarchaeological assessment / palaeoenvironmental survey which will be established in the post-consent stages of the Projects. This will be set-out as part of the mitigation measures and strategies in the Outline WSI submitted as part of the final DCO application.

22.6.3 The Setting of Heritage Assets

199. The initial setting assessment undertaken to date and presented in this chapter addresses Step 1 of Historic England's guidance on the Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Historic England, 2017a), which identifies the heritage assets affected and their settings.
200. A number of heritage assets located in the vicinity of the Substation Zones have also been subject to a preliminary assessment with respect to Step 2 of the approach, which assesses whether, how and to what degree setting makes a positive contribution to the significance of the heritage assets in question (**Appendix 22.4**). This work is ongoing.
201. It is anticipated that a number of additional site visits will take place prior to the submission of the DCO application to further inform the additional stages of the heritage setting assessment. The site visits and assessment undertaken to date were devised with the purpose of facilitating a sufficiently early understanding of the designated heritage assets to enable any potential changes in setting from the proposed above ground infrastructure to be adequately identified in this chapter. This approach has also facilitated the identification of heritage assets considered to require further heritage setting considerations specific to the Onshore Development Area.
202. Additional site visits are intended to supplement and build upon this assessment further within the final DCO application, in conjunction with available LVIA toolkits. It is anticipated that these additional survey and assessment measures will enable the significance of effect of any change in the setting of heritage assets arising from the Projects to be further determined, thereby informing decisions regarding appropriate mitigation measures which seek to reduce (or offset) any identified impacts to a non-significant level.

22.7 Assessment of Significance

203. This section outlines potential impacts as a result of the Projects, their likely magnitude and the resulting significance of any effects when compared against the heritage importance of assets assessed, using the assessment methodology described in section 22.4.3.
204. A range of potential impacts may occur to onshore archaeology and cultural heritage assets as a result of changes during the construction, operation and decommissioning of the Projects. The Projects have the potential to impact upon the historic environment resource in a number of ways, through direct (physical) changes, indirect (physical) changes, and indirect (non-physical) changes to the setting of heritage assets. Some impacts and changes would be temporary and others permanent, some confined to the construction stages and others more permanent during operation and the lifespan of the Projects, and subsequent decommissioning. A summary of all potential impacts identified for onshore archaeology and cultural heritage is provided in section 22.12.

22.7.1 Potential Effects During Construction

205. Direct (physical) impacts, as stated in the NPS EN-3 (DECC 2011b: 49) and the draft revised NPS (BEIS, 2021c), encompass direct effects from the physical siting of the Onshore Development Area. Potential direct impacts thus comprise both direct damage to archaeological deposits and material and the disturbance or destruction of relationships between deposits and material and their wider surroundings. This may include buried archaeological remains. Consequently, all aspects of the Projects which involve intrusive groundworks have the potential to affect heritage assets with archaeological interest (e.g. buried archaeological remains) through direct physical change.
206. The Projects also have the potential to change local hydrological processes which in turn may result in impacts of an indirect (physical) nature occurring upon buried archaeological deposits through either desiccation or waterlogging.

207. Indirect (non-physical) impacts on the historic environment, as stated in NPS EN3 (DECC 2011b: 67), include heritage assets being affected by change in their setting. Indirect (non-physical) impacts upon significance as a result of change in the setting of heritage assets have the potential to occur throughout the lifetime of the Projects, thus encompassing all phases, from construction, into operation and subsequent decommissioning. Indirect non-physical impacts upon the setting of heritage assets are most relevant as a result of the presence of above ground infrastructure for the Projects during the operational phase, effects of which may be long-term or 'permanent' in nature. Indirect non-physical impacts upon the setting of heritage assets may also arise as a result of construction and decommissioning works, although effects would be, by comparison, shorter in duration and of a temporary nature.
208. The impact assessment as presented in this chapter assumes that activities associated with construction may theoretically occur anywhere within the Onshore Development Area.
209. As such heritage assets will not be considered as single, individual receptors as part of an asset-by-asset approach. Instead, for the purposes of this chapter, designated and non-designated heritage assets have been grouped. The following broad groups will apply and be taken forward into the impact assessment:
- Below ground archaeology:
 - Areas of possible archaeological interest (including designated and non-designated buried archaeological heritage assets) (ranging between anticipated low and high, as a worst case, heritage importance);
 - Unknown potential buried archaeological remains (precautionary high heritage importance until evidenced otherwise); and
 - Geoarchaeological and palaeoenvironmental deposits (precautionary medium heritage importance until evidenced otherwise).
 - Above ground archaeology/built heritage assets:
 - Designated heritage assets (medium to high heritage importance); and
 - Areas of possible archaeological/cultural heritage interest (including non-designated above ground archaeology and cultural heritage assets, e.g. earthworks and standing structures) (ranging between anticipated low to high, as a worst case, heritage importance).

22.7.1.1 Impact 1 Direct Physical Impact on (Permanent Change to) Designated Heritage Assets

210. Impacts resulting in potential effects as part of the construction work are those associated with intrusive groundworks, including:
- The removal of topsoil anywhere across the Onshore Development Area;
 - Open cut trenching as part of the onshore export cable installation works;
 - The excavation of jointing bays, HDD launch/receiver pits and link boxes along the onshore export cable corridor;
 - Groundworks associated with the onshore export cable corridor easement and associated access trackways;
 - Vibration from HDD drilling and other intrusive groundworks; and
 - Accidental damage from plant movement and other construction traffic.
211. Any direct (physical) impact to designated heritage assets (and their associated heritage significance) should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification would be needed for any loss (EN-1, paragraph 5.8.15). Any direct (physical) impact would likely be permanent and irreversible. If disturbed or removed without an appropriate record having been made, their context and relationship to other heritage assets is partially or completely lost and their heritage significance is as such likely to be reduced.
212. The Onshore Development Area avoids all known designated heritage assets (e.g. Conservation Areas, Scheduled Monuments, Listed Buildings, etc.) and as such, no direct physical impacts are anticipated to occur to designated heritage assets.

- 22.7.1.2 Impact 2 Direct Physical Impact on (Permanent Change to) Non-designated Heritage Assets (Including Buried Archaeological Remains, Historic Earthworks and Structures)
213. Impacts resulting in potential effects as part of the construction work are those associated with intrusive groundworks, including:
- The removal of topsoil anywhere across the Onshore Development Area;
 - The excavation of transition joint bays at the landfall;
 - The application of HDD at the landfall;
 - Open cut trenching as part of the onshore export cable installation works;
 - The excavation of jointing bays, HDD launch/receiver pits and link boxes along the onshore export cable corridor;
 - Groundworks associated with the onshore export cable corridor easement and associated access trackways;
 - Groundworks associated with the Substation Zones;
 - Vibration from HDD drilling and other intrusive groundworks; and
 - Accidental damage from plant movement and other construction traffic.
214. Any adverse impacts (and associated effects) upon sub-surface archaeological remains, geoarchaeological / palaeoenvironmental deposits, and above ground heritage assets due to construction-related works would likely be permanent and irreversible in nature. Once archaeological deposits, and the relationships between deposits, material and their wider surroundings have been damaged or disturbed, it is not possible to reinstate or reverse those changes. As such, direct physical impacts to an asset's fabric (where elements lost contribute to heritage significance) can represent a total loss of an asset's heritage significance, or parts of it, and the character, composition or attributes of the asset may be fundamentally changed or lost from the site altogether.

215. A staged programme of assessment has commenced with a view to building upon an understanding of potential archaeological remains and their likely heritage significance in the non-designated heritage assets study area and more specifically within the Onshore Development Area. This approach, to date, has identified several areas of possible archaeological and geoarchaeological interest, which have been assigned initial predicted heritage significance levels between low and high. Those considered to be most vulnerable regarding the various elements of construction are highlighted below. However, it should be borne in mind that the assessments and surveys being progressed (section 22.6) will further inform the nature and extent of any features present and have the potential to alter the perceived heritage significance of assets encountered.
216. It should also be emphasised that the potential for buried archaeological remains, geoarchaeological / palaeoenvironmental remains, and above ground heritage assets, not currently represented by the desk-based and non-intrusive survey data, to be impacted as a result of construction works should not be discounted. In the absence of further data regarding the 'potential' archaeological resource, such assets must be considered as potentially having a high perceived heritage significance.
217. Extant earthworks, field boundaries and ancient woodland are an integral part of the HLC. Any loss of such features arising as a result of construction-related activities therefore has the potential to impact upon an integral part of the HLC within the Onshore Development Area and wider surrounds. A full review of historic boundaries and lanes which may be impacted by the Onshore Development Area will be undertaken following further refinement of the Onshore Development Area and presented as ES stage.

22.7.1.2.1 Magnitude of Impact – DBS East or DBS West in Isolation

218. Any direct physical impacts on the significance of buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets are often considered to be of high magnitude. However, the extent of any impact will often depend on the presence, nature and depth of any such remains, in association with the depth of construction-related groundworks, as well as the specific elements, aspects or areas of the asset subject to impact (including the level to which these may or may not contribute to heritage significance).

219. As such, a reduced magnitude of impact may be relevant where the anticipated interaction between the proposed groundworks and buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets (as indicated by available data) is considered to be unlikely or limited in terms of impact upon the asset's heritage significance. The magnitude of direct physical impacts on buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets during the construction phase could therefore range from negligible to high.
220. As the Onshore Development Area is still subject to further refinement and there is still uncertainty regarding the nature, extent and depth of any buried archaeological and geoarchaeological / palaeoenvironmental remains, direct physical impacts from construction works within the Onshore Development Area could represent up to a high adverse magnitude of impact.
221. As the Onshore Development Area is still subject to further refinement, direct physical impacts to above ground heritage assets as part of construction works within the landfall locations and onshore export cable corridor have the potential to result in a high adverse magnitude of impact.

22.7.1.2.2 Magnitude of Impact – DBS East and DBS West Together

222. The worst case scenario for direct physical impacts on buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets will be based upon the general assumption that the greatest potential footprint for both DBS East and DBS West represents the greatest potential for direct physical impacts (e.g. damage / destruction) to surviving buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets.
223. The combined footprint of both DBS East and DBS West, therefore, represents a greater potential for direct impacts than if, for example, only DBS East or DBS West were to be built in isolation. However, whilst there is a greater potential for direct impacts, the increased footprint of DBS East and DBS West together would not lead to an increase to the magnitude of impact for any of the identified buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets.

22.7.1.2.3 *Sensitivity of Receptor*

22.7.1.2.3.1 Landfall Locations

224. Data available and assessed to date (as part of this assessment) within the landfall locations indicate a predominance of features associated with WWII. The majority have been damaged by coastal erosion and are now located along the foreshore. However two pillboxes survive in relatively good condition within Landfall Zone 8 and one within Landfall Zone 9. Based on the information available to date, the heritage assets relating to extant WWII structures and associated sub-surface remains have been assigned a low to medium heritage importance.
225. Within the cliff face a number of archaeological features and deposits have been recorded within the exposed face and artefacts have been recovered. Of particular note is the site of Withow Mere, a Mesolithic site which continued in use as a lake dwelling during the Neolithic period. Most of it has been eroded by the sea however there is potential for associated remains to survive within Landfall Zone 9, albeit very close to the cliff edge. Based on information available to date, these heritage assets are assigned a low to medium heritage importance.
226. The aerial photographic and LiDAR assessment (**Appendix 22.2**) and geophysical survey (**Appendix 22.6**) have recorded a number of cropmark and anomalies of probable archaeological origin including a ring ditch, enclosures and linear ditches extending southwards from a complex of enclosures recorded to the north outside the Onshore Development Area. Due to the uncertainty of the heritage significance of these cropmarks and geophysical anomalies, and in the absence of further assessment and survey, these assets have been assigned a precautionary low to high heritage importance.
227. The landfall locations are also likely to contain alluvium which is of geoarchaeological interest as it may contain or partially mask Holocene archaeological features and/or layers, preserve palaeochannels and contain peat or richly-organic units that have moderate to high palaeoenvironmental potential. Organic deposits have been recorded at the landfall locations as well as lacustrine deposits which are likely to be of Late Pleistocene to Holocene date. In addition, the discovery of prehistoric material associated with glaciofluvial deposits in the vicinity of the possible landfall locations suggest a high potential for preserving Palaeolithic material. Due to the uncertainty of the heritage significance of these deposits, in the absence of further assessment and survey these deposits have been assigned a precautionary medium heritage importance.

22.7.1.2.3.2 Onshore Export Cable Corridor

228. Data available and assessed to date within the onshore export cable corridor indicates the potential presence of sub-surface archaeological remains of varying type. Due to the extent of the onshore export cable corridor, the large number of possible areas of archaeological interest currently identified and the inability to accurately ascertain the presence / absence, nature and extent of the potential buried remains within it, it is not possible at this stage of enquiry to identify each and every heritage asset representative of below ground archaeology that may be impacted by construction works associated with final DCO boundary.
229. Areas of notable features within the Onshore Development Area are presented in section 22.5.3, and all recorded heritage assets relating to potential sub-surface remains are listed in **Table 22-11**. These areas have been variously assigned a low to high perceived heritage importance based on information available to date.
230. In addition to areas of potential buried archaeological remains, an area representative of above ground archaeological remains (historic earthworks) has been identified at Nunkeeling (**Table 22-12**). Based on information available to date, this heritage asset has been assigned a medium to high heritage importance due to the rarity of surviving historic earthworks across the region.
231. With respect to the potential presence of geoarchaeological / palaeoenvironmental remains, alluvium is likely to be present between Leven and Woodmansey where the onshore export cable corridor crosses the River Hull valley, and may be present locally where it infills depressions in the surface of the underlying Pleistocene deposits or associated with historic or modern river courses. As noted above, alluvium is of geoarchaeological interest. Organic deposits have also been recorded along the banks of the River Hull in the southwest of the Onshore Development Area.
232. Glaciofluvial deposits which have a moderate potential to preserve Palaeolithic material, although a low potential to preserve palaeoenvironmental material, are present along the margins of the River Hull where they likely represent an earlier phase of river activity adjacent to the modern River Hull. Glaciofluvial deposits are present in southern parts of the onshore export cable corridor but here their potential is more limited.

233. Pleistocene age Head deposits have been mapped within the onshore export cable corridor between Beverley and Bentley; these have a low to moderate potential to preserve archaeological and palaeoenvironmental remains, however they may seal or bury earlier archaeology. Due to the uncertainty of the heritage significance of these deposits, in the absence of further assessment and survey these deposits have been assigned a precautionary medium heritage importance.

22.7.1.2.3.3 Substation Zones

234. Data available and assessed to date for the Substation Zones include cropmarks and geophysical anomalies representing ring ditches and enclosures, a possible trackway and associated field systems of unknown date within Substation Zone 1. These potential sub-surface archaeological remains have all be recorded from aerial imagery (**Appendix 22.2**) and the geophysical survey (**Appendix 22.6**). Due to the uncertainty of the heritage significance of these cropmarks and geophysical anomalies, and in the absence of further assessment and survey, these assets have been assigned a precautionary low to high heritage importance.
235. Within Substation Zone 4, the assessment of aerial imagery has identified cropmarks representing a partial enclosure, extract pit and former field boundaries towards the northern extent, along with areas of Medieval / Post Medieval ridge and furrow along the eastern and southern extents of the zone (**Appendix 22.2**). The geophysical survey has recorded a possible ring ditch although there is some uncertainty with this interpretation (**Appendix 22.6**). Due to the uncertainty of the heritage significance of these cropmarks and geophysical anomalies, and in the absence of further assessment and survey, these assets have been assigned a precautionary low to high medium importance.
236. Within the Substation Zones, Head deposits of Pleistocene date have been mapped which have been assigned a precautionary medium level of heritage importance.

22.7.1.2.4 Significance of Effect – DBS East or DBS West in Isolation

237. The importance of the receptors potentially affected by this impact ranges from low to high. In a worst-case scenario, there would be a high adverse magnitude of impact. In accordance with the significance of effect matrix (**Table 22-9**) without mitigation, should impacts occur within either DBS East or DBS West in isolation, these have the potential to be of **major** adverse significance.

22.7.1.2.5 *Significance of Effect – DBS East and DBS West Together*

238. The potential significance of effect for direct (physical) impacts to buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets, without mitigation, is the same for DBS East and DBS West together as for DBS East or DBS West in isolation (i.e. any direct impacts have the potential to be of **major** adverse significance).

22.7.1.2.6 *Mitigation and Residual Significance of Effect – DBS East or DBS West in Isolation*

239. The Applicant have committed to undertake additional programmes of survey and evaluation where of relevance to sub-surface archaeological remains, which may include any outstanding geophysical survey and a scheme wide programme of trial trenching. This strategy will be outlined as part of a project-specific Outline WSI, submitted with the final DCO application. The survey and evaluation work may indicate the presence of previously unknown buried archaeology (and further verify previously known / anticipated buried remains as indicated by the previous non-intrusive survey methods), enabling the resource to be appropriately addressed by means of mitigating any impacts in a manner that is proportionate to the significance of the remains present.
240. Archaeological mitigation is envisaged to comprise a combination of the following recognised standard approaches:
- Further advance and enacting of preservation in situ options and requirements (e.g. avoidance / micro-siting / HDD etc., where possible);
 - Archaeological excavation: including subsequent post-excavation assessment, and analysis, publication and archiving;
 - Archaeological monitoring / watching brief: including subsequent post-excavation assessment, and analysis, publication and archiving (where appropriate); and
 - Earthwork condition surveys: including subsequent reporting and archiving (followed by backfilling and reinstatement, where required on a case-by-case basis).
241. Further evaluation of potential geoarchaeological / palaeoenvironmental remains is likely to include a programme of geoarchaeological monitoring of engineering-led GI works to inform mitigation approaches such as geoarchaeological assessment and palaeoenvironmental survey.

242. Impact to the HLC (including hedgerows and parish boundaries) will be minimised by returning field boundaries / areas / hedgerows to their pre-construction condition (noting the limitations of planting directly over the cables) and character post-construction, as part of a sensitive programme of backfilling and reinstatement / landscaping. Certain hedgerows and field boundaries (e.g. parish boundaries) may require recording prior to the construction process and enhanced provisions made during reinstatement. Areas of ancient woodland within the Offshore Development Area will be avoided.
243. The site-specific measures adopted by the Applicant will be determined post-consent as the Projects progress in a specific and bespoke manner, tailored on a case-by-case / area-by-area basis (as required) accordingly and in response to the combination of onshore archaeological and cultural heritage assessment. Opportunities to optimise the programme, including expedient commencement of archaeological work in the immediate post-consent stages will also be sought in ongoing discussion and agreement with the Historic Environment ETG.
244. The preferred and optimum mitigation measure is preservation in situ, wherever possible. By avoiding buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets, either largely or in their entirety (as indicated by existing and available data), the magnitude of impact may be reduced depending on the extent of the asset in question (with reference to change or impact upon heritage significance) and the degree to which preservation in situ has been applied.
245. Where avoidance is not possible, significant impacts upon buried archaeological and geoarchaeological / palaeoenvironmental remains, and above ground heritage assets may potentially, to a degree, be off-set by the application of appropriate alternative mitigation measures which serve to preserve archaeological remains, where present, by record (e.g. following intrusive evaluation and subsequent excavation, where required).
246. Although preservation by record cannot be considered to reduce the magnitude of impact (and associated significance of effect) per se, given the physical loss of a given asset, the acquisition of a robust archaeological record of an asset may be considered to adequately compensate identified, recognised and acceptable harm to a heritage asset in line with industry standard good practice mitigation measures and compatible with the definitions outlined in section 22.4.3.

- 247. With the application of mitigation through preservation by record, it is anticipated that the residual magnitude of impact and significance of effect can be reduced or offset to levels considered non-significant in EIA terms (i.e. anticipated to be no worse than a **minor** adverse significance of effect).
- 248. The application of mitigation by preservation in situ would result in no impact.

22.7.1.2.7 Mitigation and Residual Significance of Effect – DBS East and DBS West Together

- 249. The application of mitigation (as detailed above) will be the same for the construction of both DBS East and DBS West, as for either Project built in isolation. Therefore, with the application of mitigation through preservation by record, it is anticipated that the residual magnitude of impact and significance of effect can be reduced or offset to levels considered non-significant in EIA terms (i.e. anticipated to be no worse than a **minor** adverse significance of effect).
- 250. The application of mitigation by preservation in situ would result in no impact.

22.7.1.3 Impacts 3 and 4 Indirect Physical Impact on (Permanent Change to) Designated and Non-designated Heritage Assets

- 251. Potential indirect impacts to designated and non-designated heritage assets from changes to ground conditions is assessed with reference to **Chapter 20 Water Flood Risk and Hydrology**.
- 252. Construction activities undertaken as part of the Projects have the potential to effect below ground deposits of archaeological and geoarchaeological interest over a wider area than that of the footprint of the Projects. For example, through hydrological changes that may cause desiccation and drying out of wetland deposits and associated preserved waterlogged archaeological or geoarchaeological remains.
- 253. In addition to potential changes to ground conditions, potential indirect impacts to designated and non-designated heritage assets could occur due to vibration from groundworks affecting the fabric of a heritage asset. This is assessed with reference to **Chapter 25 Noise**.

22.7.1.3.1 *Magnitude of Impact – DBS East or DBS West in Isolation*

254. As the presence / absence, nature, and extent of deposits of geoarchaeological and palaeoenvironmental interest is currently unknown (or not fully established) within the Onshore Development Area, it is not possible to identify potential impacts according to the various elements of construction. As a worst case scenario, it is anticipated that any indirect physical impact could result in a medium adverse magnitude of impact.
255. Potential for vibration from groundworks affecting the fabric of a heritage asset (both designated and non-designated) would likely occur through the operation of the HDD and ancillary equipment taking place within the Onshore Development Area. Any vibration created during the construction phase could have an indirect physical impact upon heritage assets. The operation of the HDD and ancillary equipment would produce the greatest vibration impacts along the onshore export cable corridor.
256. The vibration effects from the operation of the HDD and ancillary equipment within the onshore export cable corridor is assessed within **Chapter 25 Noise** as being of no greater than negligible magnitude of impact. Therefore, the magnitude of impact from vibration effects upon non-designated heritage assets is no greater than negligible. There is considered to be no vibration effects upon designated heritage assets as these are avoided by the Onshore Development Area.

22.7.1.3.2 *Magnitude of Impact – DBS East and DBS West Together*

257. The worst case scenario for indirect physical impacts on deposits of geoarchaeological and palaeoenvironmental interest will be based upon the general assumption that the greatest potential footprint for both DBS East and DBS West represents the greatest potential for indirect physical impacts to deposits of geoarchaeological and palaeoenvironmental interest.
258. The combined footprint of both DBS East and DBS West, therefore, represents a greater potential for indirect physical impacts than if, for example, only DBS East or DBS West were to be built in isolation. However, whilst there is a greater potential for indirect physical impacts, the increased footprint of DBS East and DBS West together would not lead to an increase to the magnitude of impact for any deposits of geoarchaeological and palaeoenvironmental interest.

259. The combined footprint and greater number of HDDs of both DBS East and DBS West represents a greater potential for indirect physical impacts from the operation of the HDD and ancillary equipment upon non-designated heritage assets than if, for example, only DBS East or DBS West were to be built in isolation. However, whilst there is a greater potential for indirect physical impacts, the increased footprint and greater number of HDDs of DBS East and DBS West together would not lead to an increase to the magnitude of impact upon non-designated heritage assets from vibration effects.

22.7.1.3.3 Sensitivity of Receptor

260. Areas which contain deposits of geoarchaeological interest (based on available data) have been identified by a geoarchaeological desk-based assessment (**Appendix 22.5**). This approach has identified several areas of possible geoarchaeological and palaeoenvironmental interest, which have been assigned a precautionary medium heritage importance (until evidenced otherwise).
261. With respect to non-designated heritage assets which could be affected by vibration; these range from a level of low to high heritage importance (**Table 22-11** and **Table 22-12**).

22.7.1.3.4 Significance of Effect – DBS East or DBS West in Isolation

262. In accordance with the significance of effect matrix (**Table 22-9**) without mitigation, should impacts occur from changes to hydrological processes within either DBS East or DBS West in isolation, these have the potential to be of **moderate** adverse significance.
263. In accordance with the significance of effect matrix (**Table 22-9**) without mitigation, should impacts occur from vibration effects within either DBS East or DBS West in isolation, these have the potential to be of **minor** adverse significance. No further mitigation measures are proposed.

22.7.1.3.5 Significance of Effect – DBS East or DBS West Together

264. The potential significance of effect for indirect physical impacts to deposits of geoarchaeological interest, without mitigation, is the same for DBS East and DBS West as for DBS East or DBS West in isolation (i.e. any indirect physical impacts have the potential to be of **moderate** adverse significance).

265. The potential significance of effect for indirect physical impacts to non-designated heritage assets from vibration effect, without mitigation, is the same for DBS East and DBS West as for DBS East or DBS West in isolation (i.e. any indirect physical impacts have the potential to be of **minor** adverse significance and no further mitigation is proposed).

22.7.1.3.6 Mitigation and Residual Significance of Effect – DBS East or DBS West in Isolation

266. The potential for the project to encounter currently unrecorded geoarchaeological/ palaeoenvironmental remains will be mitigated by means of implementing additional mitigation measures and commitments (set out in a project-specific Outline WSI submitted with the final DCO application), which will include reference to a project-wide approach to geoarchaeological assessment/ palaeoenvironmental survey, which will be established in the post-consent stages.
267. With the application of mitigation through preservation by record, it is anticipated that the residual magnitude of impact and significance of effect can be reduced or offset to levels considered non-significant in EIA terms (i.e. anticipated to be no worse than a **minor** adverse significance of effect).

22.7.1.3.7 Mitigation and Residual Significance of Effect – DBS East and DBS West Together

268. The application of mitigation (as detailed above) will be the same for the construction of both DBS East and DBS West, as for either Project built in isolation. Therefore, with the application of mitigation through preservation by record, it is anticipated that the residual magnitude of impact and significance of effect can be reduced or offset to levels considered non-significant in EIA terms (i.e. anticipated to be no worse than a **minor** adverse significance of effect).

22.7.1.4 Impacts 5 and 6 Temporary Change to the Setting of Heritage Assets (Both Designated and Non-designated) Which Could Affect Their Heritage Significance

22.7.1.4.1 *Magnitude of Impact – DBS East or DBS West in Isolation*

269. Activities undertaken as part of construction works for the Projects have the potential to impact designated and non-designated heritage assets through a temporary change in their setting which may affect their heritage significance. Temporary changes in the setting of heritage assets, should they occur, may do so for example through the presence of machinery, construction traffic and general construction activities taking place within and adjacent to the Onshore Development Area. The sight, sound, any dust created, and even smell, during the construction phase has the potential to temporarily change the setting of heritage assets and their associated heritage significance.
270. Any impact during construction would be short term and reversible. It is therefore considered that any change to setting and associated heritage significance would result in a low adverse magnitude of impact.

22.7.1.4.2 *Magnitude of Impact – DBS East and DBS West Together*

271. The duration of the construction phase of both DBS East and DBS West together represents a greater potential for changes to the setting of heritage assets than if, for example, only DBS East or DBS West were to be built in isolation. However, whilst there is a greater potential for changes to setting, the longer construction duration of building DBS East and DBS West sequentially would not lead to an increase to the magnitude of impact for changes to setting and associated heritage significance as the impact remains temporary and reversible.

22.7.1.4.3 *Sensitivity of Receptor*

272. Initial review of the designated heritage assets located in proximity to the Onshore Development Area and therefore potentially susceptible to a temporary change to their setting include the following assets:
- Royal Observer Corps underground monitoring post and World War II visual spotting post (Scheduled Monument - NHLE 1021192);
 - Skipsea Grange (Grade II Listed Building - NHLE 1083825);
 - Hallgarth medieval hall and moat (Scheduled Monument - NHLE 1013705);
 - Church of All Saints (Grade I Listed Building - NHLE 1083824);
 - Skipsea Castle (Scheduled Monument - NHLE 1011212);

- Dunnington Conservation Area;
- Church of St Mary Magdalene and Saint Helena (Grade II Listed Building – NHLE 1249440);
- Catfoss Hall (Grade II Listed Building – NHLE 1249759)
- Siggleshorne Conservation Area;
- Church of All Saints (Grade II* Listed Building – NHLE 1160744);
- Eske medieval settlement and field system (Scheduled Monument – NHLE 1005216);
- Beverley sanctuary limit stone, Bishop Burton cross (Scheduled Monument – NHLE 1012589);
- Romano-British enclosure and two adjoining fields on Westwood Common (Scheduled Monument – NHLE 1013999);
- The Black Mill (Grade II Listed Building – NHLE 1310087);
- Heavy Anti-aircraft gunsite (Scheduled Monument – NHLE 1019186);
- Beverley sanctuary limit stone, Bentley cross (Scheduled Monument – NHLE 1012590);
- Old Hall (Grade II Listed Building – NHLE 1103420); and
- Low Hall (NHLE 1103419, 1310090, 1346992 – Grade II Listed Buildings).

273. These designated heritage assets have a medium to high level of importance and are shown on **Figure 22-3**.

22.7.1.4.4 Significance of Effect – DBS East or DBS West in Isolation

274. In accordance with the significance of effect matrix (**Table 22-9**) without mitigation, should impacts occur from changes to setting within either DBS East or DBS West in isolation, these have the potential to be of **moderate** adverse significance, as a worst case scenario.

22.7.1.4.5 Significance of Effect – DBS East and DBS West Together

275. The potential significance of effect from changes to heritage setting and associated heritage significance, without mitigation, is the same for DBS East and DBS West together (either built sequentially or concurrently) as for DBS East or DBS West in isolation (i.e. any change to setting has the potential to be of **moderate** adverse significance, as a worst case scenario).

22.7.1.4.6 *Mitigation and Residual Significance of Effect – DBS East or DBS West in Isolation*

276. During construction the movement of construction traffic and machinery will be temporary and localised. The removal of hedgerows and trees will be avoided where possible. On completion of construction, the onshore export cable corridor will be fully reinstated to its previous condition. No above-ground infrastructure will remain, other than manholes for link boxes every 0.75 – 1.5km along the cable route. Hedgerows or trees will not be replanted directly over the buried cables. A landscape scheme will be developed to secure the restoration and, where possible, enhancement of the landscape post-construction.
277. The reinstatement of the landscape will help reduce the magnitude of impact from low to negligible. Therefore, the residual effect is **minor** adverse (as a worst case scenario), which is considered non-significant in EIA terms.

22.7.1.4.7 *Mitigation and Residual Significance of Effect – DBS East and DBS West Together*

278. The application of mitigation (as detailed above) will be the same for the construction of both DBS East and DBS West, as for either Project built in isolation. Therefore, with the application of mitigation the magnitude of impact will reduce from low to negligible. Therefore, the residual effect is **minor** adverse (as a worst case scenario), which is considered non-significant in EIA terms.

22.7.2 **Potential Effects During Operation**

279. During operation, it is expected that there will be no further requirement for land to be disturbed or excavated, except in the event that onshore export cables require repair or maintenance. However, these activities would not extend beyond the construction footprint, and would be relatively rare and localised in occurrence. As such, direct and indirect physical impacts to both designated and non-designated heritage assets during operation have been scoped out of further assessment.
280. The presence of permanent above ground onshore infrastructure could, however, have an effect on heritage significance as a result of change in the setting of heritage assets due to the presence of new, permanent above ground onshore infrastructure associated with the Projects being introduced to (and present within) the landscape.

22.7.2.1 Impacts 7 and 8 Permanent Change to the Setting of Heritage Assets (Both Designated and Non-designated) Which Could Affect Their Heritage Significance

22.7.2.1.1 *Magnitude of Impact – DBS East or DBS West in Isolation*

281. The presence of permanent above ground infrastructure at the two Substation Zones could have an ongoing impact on the setting of heritage assets for the duration of the operation phase as a result of its presence within the landscape and its day-to-day use.
282. The setting assessment work is ongoing, however, in the absence of a confirmed final design for the onshore substations, the magnitude of impact upon the identified heritage assets as a result of a change to their setting affecting their heritage significance could be **medium** adverse, as a worst case scenario.

22.7.2.1.2 *Magnitude of Impact – DBS East and DBS West Together*

283. The operation of two onshore substations for both DBS East and DBS West together represents a greater potential for permanent changes to the setting of the identified heritage assets affecting their heritage significance than if, for example, only DBS East or DBS West were to be built in isolation. However, whilst there is a greater potential for changes to setting, the presence of two onshore substations for DBS East and DBS West together would not lead to an increase to the magnitude of impact (assessed as **medium** adverse) for changes to setting and associated heritage significance as the impact.

22.7.2.1.3 *Sensitivity of Receptor*

284. The following heritage assets may be subject to a change in setting affecting their heritage significance, due to the presence of the onshore substations and have been identified as requiring further assessment:
- Black Mill (NHLE 1310087 - Grade II Listed Building) ;
 - Square barrow on Westwood Common, 50m west of Blackmill (NHLE 1013996 - Scheduled Monument);
 - Oval barrow on Westwood Common, 55m north west of Blackmill (NHLE 1014000 - Scheduled Monument);
 - Bowl barrow on Westwood Common, 150m north of Blackmill (NHLE 1013991 - Scheduled Monument);
 - Square barrow on Westwood Common, 120m south of Blackmill (NHLE 1013995 - Scheduled Monument);

- Bowl barrow on Westwood Common, 50m north of Blackmill (NHLE 1013992 - Scheduled Monument);
- Heavy Anti-aircraft gunsite, 350m west of Butt Farm (NHLE 1019186 - Scheduled Monument);
- Walkington Conservation Area;
- Beverley sanctuary limit stone, Walkington Cross (NHLE 1012591 - Scheduled Monument);
- Beverley sanctuary limit stone, Bentley Cross (NHLE 1012590 - Scheduled Monument);
- Bowl barrow 400m north of Highfield House (NHLE 1007731 - Scheduled Monument);
- The Minster Church of St John (Beverley Minster) (NHLE 1084028 - Grade I Listed Building);
- Risby Hall (NHLE 1001419 - Grade II Registered Park and Garden);
- Risby Jacobean gardens, hall and medieval settlement remains (NHLE 1018600 - Scheduled Monument);
- 'Cellar Heads' moated site and related ridge and furrow earthworks at Risby Park, 700m north west of Risby Park Farm (NHLE 1015312 - Scheduled Monument);
- Old Hall (NHLE 1103420 - Grade II Listed Building); and
- Low Hall (NHLE 1103419, 1310090, 1346992 - Grade II Listed Buildings).

285. These heritage assets have a medium to high level of heritage importance and are shown on **Figure 22-3**.

22.1.1.1.1 Significance of Effect – DBS East or DBS West in Isolation

286. In accordance with the significance of effect matrix (**Table 22-9**) without mitigation, should impacts occur from changes to setting within either DBS East or DBS West in isolation, these have the potential to be of **moderate to major** adverse significance, as a worst case scenario. A major adverse conclusion would be the result of a medium to high adverse magnitude of change (partial loss, fundamental alteration to or severe compromise of key elements of the asset's fabric and / or setting) to a heritage asset of medium to high importance (assets of regional, national or international importance).

22.7.2.1.4 Significance of Effect – DBS East and DBS West Together

287. The potential significance of effect from changes to heritage setting and associated heritage significance, without mitigation, is the same for DBS East and DBS West as for DBS East or DBS West in isolation (i.e. any change to setting has the potential to be of **moderate** to **major** adverse significance, as a worst case scenario). A major adverse conclusion would be the result of a medium to high adverse magnitude of change (partial loss, fundamental alteration to or severe compromise of key elements of the asset's fabric and / or setting) to a heritage asset of medium to high importance (assets of regional, national or international importance).

22.7.2.1.5 Mitigation and Residual Significance of Effect – DBS East or DBS West in Isolation

288. The onshore substation will be designed to reduce the overall height and massing of associated structures and other elements as far as possible. Landscape proposals will include measures for the enhancement of the landscape during the operational phase of the onshore substation. This will include landscape screening of the onshore substation such as hedgerow and woodland planting. Once matured, this will help to integrate the onshore substation into the existing landscape of arable fields and boundary trees/hedgerows. Further detail on the principles of mitigation are set out in **Chapter 23 Landscape and Visual Impact Assessment**.
289. While the mitigation measures will likely reduce the magnitude of impact, the residual significance of effect can only be determined following the provision of a detailed mitigation plan at ES stage.
290. The residual impact is anticipated to be reduced in the majority of cases to minor adverse, as a worst case scenario, following the application of appropriate and proportionate mitigation approaches, to be agreed in ongoing consultation with the ETG.

22.7.2.1.6 Mitigation and Residual Significance of Effect – DBS East and DBS West Together

291. The application of mitigation (as detailed above) will be the same for the operation of both DBS East and DBS West, as for either Project built in isolation. Therefore, while the mitigation measures will likely reduce the magnitude of impact, the residual significance of effect can only be determined following the provision of a detailed mitigation plan.

22.7.3 Potential Effects During Decommissioning

292. No decision has been made regarding the final decommissioning policy for the Projects as it is recognised that industry best practice, rules and legislation change over time. The detailed decommissioning activities and methodology would be determined later within the project's lifetime to be in line with latest and current guidance, policy, and legislation at that point. At that juncture, the decommissioning methodology would be agreed with the relevant authorities and statutory consultees. Onshore, decommissioning is likely to include removal or reuse of the onshore substation with the cables and jointing bays left in situ or removed.
293. Assuming that provision is made for methods of removal which minimise further impact to the wider area, it is reasonable to assume that any potential damage upon designated and non-designated heritage assets would have already occurred as part of construction activities. However, it is noted that the demolition of buildings and infrastructure can have an impact greater than that of construction e.g. if grubbing out of foundations or remediation of contaminants is required. As such, the worst case scenario regarding decommissioning cannot be ascertained until the decommissioning plan is finalised.
294. Changes to setting may be present due to visual and audible impacts associated with decommissioning activities. Any changes to the setting of heritage assets are considered to be temporary in duration, occurring in association with the decommissioning phase. As such, the worst case scenario as outlined for the construction phase in relation to temporary changes to the setting of heritage assets is unlikely to be exceeded due to decommissioning activities.

22.8 Potential Monitoring Requirements

- 295. Monitoring requirements for onshore archaeology would be described in the Outline WSI (Onshore) submitted alongside the DCO application and further developed and agreed with stakeholders prior to construction and taking account of the final detailed design of the Projects.
- 296. Direct (physical) impacts would be offset or reduced through either preservation in situ or archaeological fieldwork and reporting, undertaken by professional archaeologists and monitored by Humber Archaeology Partnership on behalf of East Riding of Yorkshire Council.

22.9 Preliminary Assessment of Cumulative Effects

- 297. As detailed in section 22.4.5, this section presents a preliminary assessment of cumulative effects in relation to Onshore Archaeology and Cultural Heritage. The final CEA will be undertaken within the ES chapter.

22.9.1 Initial Screening for Cumulative Effects

- 298. **Table 22-13** details the potential cumulative effects that may occur between the Projects and other plans, projects and activities. Only potential impacts assessed in section 22.7 where the potential for cumulative effects has been identified (minor, moderate or major) will be taken forward to the final CEA (i.e. those assessed as 'no impact' are not taken forward as there is no potential for them to contribute to a cumulative impact).

Table 22-13 Potential Cumulative Effects

Impact	Potential for Cumulative Effects	Data Confidence	Rationale
Construction			
Impact 1: Direct Physical Impact on Designated Heritage Assets	No	High	There is no potential for cumulative direct effects as no direct physical impacts are anticipated to occur to designated heritage assets.
Impact 2: Direct Physical Impact on Non-designated Heritage Assets	Yes	High	Cumulative direct effects arising from two or more projects are possible given the level of uncertainty regarding the nature and extent of the potential archaeological resource. Impacts may occur to individual archaeological features (buried or above ground) in an area of overlap or those with an extent which intersects two or more proposed project boundaries (where groundworks are anticipated). Effects may occur which affect the nature of the archaeological resource on a wider scale. Such effects also have the potential to affect the HLC of the study area (e.g., loss of earthworks as a result of one project could affect the HLC as summarised for the purposes of another project).
Impacts 3 and 4: Indirect Physical Impact on Designated and Non-designated Heritage Assets	Yes	High	Cumulative direct effects arising from two or more projects are possible in an area of overlap or those with an extent which intersects two or more proposed project boundaries (where groundworks are anticipated).

Impact	Potential for Cumulative Effects	Data Confidence	Rationale
Impacts 5 and 6: Temporary Change to the Setting of Heritage Assets Which Could Affect Their Heritage Significance	Yes	High	Cumulative changes in heritage setting arising from two or more projects are possible, particularly in the event that the construction of two or more projects is concurrent and within sight of an individual heritage asset, although additional factors affecting setting may also occur.
Operation & Maintenance			
Impacts 7 and 8: Permanent Change to the Setting of Heritage Assets Which Could Affect Their Heritage Significance	Yes	High	Cumulative changes in heritage setting arising from two or more projects are possible, particularly in the event that the infrastructure of two or more projects occurs within sight of an individual heritage asset, although additional factors affecting setting may also occur.
Decommissioning			
The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative effects during the decommissioning stage are assumed to be the same as those identified during the construction stage.			

22.9.2 Plans/Projects Considered for Cumulative Impacts

299. A high-level list of plans/projects that may result in cumulative effects with the Projects is detailed in **Table 22-14**. For Onshore Archaeology and Cultural Heritage, a search distance of 5km from the onshore development area has been used to determine the initial list of projects considered for the CEA.
300. Plans / projects have been assigned a tier level between 1 and 7, based on the most recent guidance (see **Chapter 6 EIA Methodology**). For the final CEA at ES, this high-level list will be reviewed and screened to ensure all relevant plans / projects are considered in the final assessment. All listed plans / projects will be re-examined at ES to ensure each assigned tier remains accurate at the time of writing.

Table 22-14 High-Level List of Plans/Projects Screened for Further Assessment in the Final CEA

Tier	Plan / Project	Distance to Onshore Development Area (km)
2	Dogger Bank A & B Offshore Wind Farm	Crosses onshore export cable corridor
3	A164 and Jock Lodge Junction Improvement Scheme	Crosses onshore export cable corridor
3	Solar Farm – Land south of Creyke Beck Substation, 4875 Park Lane, Cottingham	Within Onshore Development Area
3	Solar Farm – Land east and west of West of Tickton Bridge Plantation, Main Road, Routh	Adjacent to the Onshore Development Area
4	Hornsea Project Four Offshore Wind Farm	Adjacent to onshore export cable corridor
4	Scotland England Green Link 2	3.5
4	Solar Farm – Land north east and west of Carr Plantation, Ferry Road, Wawne	1.5
4	Household Recycling Centre – Land north west of Ings Road Picnic Site, Molescroft	Within Onshore Development Area

Tier	Plan / Project	Distance to Onshore Development Area (km)
6	Solar Farm – Robson & Co, White Hall, Shepard Lane, Woodmansey	Within Onshore Development Area
7	New National Grid Substation (Birkill Wood)	Within Onshore Development Area
7	North Humber to High Marnham	Within Onshore Development Area
7	Creyke Beck Substation Extension	400m from Onshore Development Area

22.10 Interactions

301. The effects identified and assessed in this chapter have the potential to interact with each other. The areas of potential interaction between effects are presented in **Table 22-15**. This provides a screening tool for which effects have the potential to interact. **Table 22-16** provides an assessment for each receptor (or receptor group) as related to these impacts.
302. Within **Table 22-16** the effects are assessed relative to each development phase to see if multiple effects could increase the significance of the effect upon a receptor. Following this a lifetime assessment is undertaken which considers the potential for effect to affect receptors across all development phases.

Table 22-15 Interactions Between Construction Impacts - Screening

Potential Interactions between Impacts						
Construction						
	Impact 1: Direct Physical Impact on Designated Heritage Assets	Impact 2: Direct Impact on Non-designated Heritage Assets	Impact 3: Indirect Physical Impact on Designated Heritage Assets	Impact 4: Indirect Physical Impact on Non-designated Heritage Assets	Impact 5: Temporary Change to the Setting of Designated Heritage Assets	Impact 6: Temporary Change to the Setting of Non-designated Heritage Assets
Impact 1: Direct Physical Impact on Designated Heritage Assets		No	Yes	No	Yes	No
Impact 2: Direct Impact on Non-designated Heritage Assets	No		No	Yes	No	Yes
Impact 3: Indirect Physical Impact on Designated Heritage Assets	Yes	No		No	Yes	No
Impact 4: Indirect Physical Impact on Non-designated Heritage Assets	No	Yes	No		No	Yes
Impact 5: Temporary Change to the Setting of Designated Heritage Assets	Yes	No	Yes	No		No
Impact 6: Temporary Change to the Setting of Non-designated Heritage Assets	No	Yes	No	Yes	No	

Potential Interactions between Impacts				
Operation				
	Impact 1: Permanent Change to the Setting of Designated Heritage Assets	Impact 2: Permanent Change to the Setting of Non-designated Heritage Assets	Impact 3: Indirect Physical Impact on Designated Heritage Assets	Impact 4: Indirect Physical Impact on Non-designated Heritage Assets
Impact 1: Permanent Change to the Setting of Designated Heritage Assets		No	Yes	No
Impact 2: Permanent Change to the Setting of Non-designated Heritage Assets	No		No	Yes
Impact 3: Indirect Physical Impact on Designated Heritage Assets	Yes	No		No
Impact 4: Indirect Physical Impact on Non-designated Heritage Assets	No	Yes	No	
Decommissioning				
It is anticipated that the decommissioning impacts would be similar in nature to those of construction.				

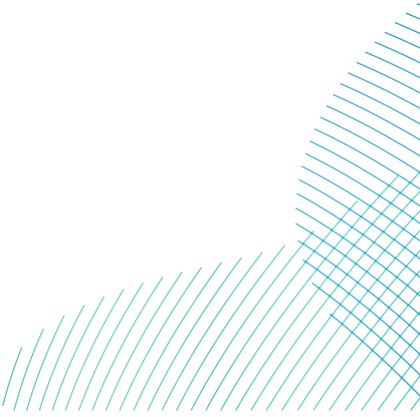


Table 22-16 Inter-relationship Between Impacts – Phase and Lifetime Assessment

Receptor	Highest Significance Level				
	Construction	Operation	Decommissioning	Phase Assessment	Lifetime Assessment
Designated Heritage Assets	No impact	Minor adverse	No impact	No greater than individually assessed impact. Mitigation (avoidance, micro-siting and route refinement) will minimise or remove the potential for indirect physical impacts on designated heritage assets during construction. There would be no direct or indirect physical disturbance during operation. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that there will be no pathway for interaction to exacerbate the potential impacts associated with these activities during or between any of the Projects' phases.	No greater than individually assessed impact. Infrastructure is only installed during construction, therefore there is no greater footprint taken as part of the operational or decommissioning phases. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that over the project lifetime these impacts would not combine to increase the significance level of any impacts identified in this assessment.
Non-designated Heritage Assets	Minor adverse	Minor adverse	Minor adverse	No greater than individually assessed impact. Mitigation will minimise or offset the potential for direct physical and indirect physical impacts on non-designated heritage assets during construction. There would be no direct or indirect physical disturbance during operation. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that there will be no pathway for interaction to exacerbate the potential impacts associated with these activities during or between any of the Projects' phases.	No greater than individually assessed impact. Infrastructure is only installed during construction, therefore there is no greater footprint taken as part of the operational or decommissioning phases. Setting is not relevant to the construction and decommissioning phases as any change will be temporary. It is therefore considered that over the project lifetime these impacts would not combine to increase the significance level of any impacts identified in this assessment.

22.11 Inter-relationships

303. For Onshore archaeology and cultural heritage potential inter-relationships between other topics assessed within this PEIR including onshore archaeology and cultural heritage. A summary of the potential inter-relationships is provided in **Table 22-17**.

Table 22-17 Onshore Archaeology and Cultural Heritage Inter-relationships

Impact / receptor	Related Chapter	Where Addressed in this Chapter	Rationale
Construction			
Impacts 1 and 2	No inter-relationships identified		
Impacts 3 and 4: Indirect (physical) impacts on designated and non-designated heritage assets.	Chapter 20 Flood Risk and Hydrology	Section 22.7.1.3	Potential impacts as a result of changes to ground conditions affecting buried archaeological deposits.
	Chapter 23 Noise	Section 22.7.1.3	Potential for vibration from groundworks affecting the fabric of a heritage asset.
Impacts 5 and 6: Temporary change to the setting of heritage assets.	Chapter 23 Landscape and Visual Impact Assessment	Section 22.7.1.4	There could be potential impacts with respect to landscape and visual receptors which could also represent potential changes to the setting of heritage assets.
	Chapter 24 Traffic and Transport	Section 22.7.1.4	Potential impacts related to the presence of construction traffic and machinery could change the setting of heritage assets.
	Chapter 25 Noise	Section 22.7.1.4	Potential impacts related to noise and vibration could change the setting of heritage assets.

Impact / receptor	Related Chapter	Where Addressed in this Chapter	Rationale
	Chapter 26 Air Quality	Section 22.7.1.4	Potential impacts from dust could change the setting of heritage assets.
Operation			
Impacts 7 and 8: Permanent change to the setting of heritage assets.	Chapter 23 Landscape and Visual Impact Assessment	Section 22.7.2.1	There could be potential impacts with respect to visual receptors at the two Substation Zones which could also represent potential changes to the setting of heritage assets.
	Chapter 25 Noise	Section 22.7.2.1	Potential impacts related to noise and vibration could change the setting of heritage assets.
Decommissioning			
Inter-relationships and the identified impacts associated with the decommissioning phase would be no greater than those identified for the construction phase.			

22.12 Summary

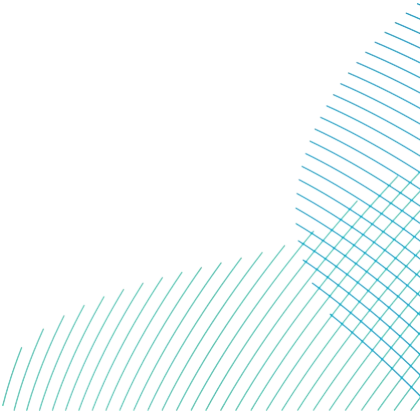
- 304. This chapter has provided a characterisation of the existing environment for onshore archaeology and cultural heritage based on both existing and site specific survey data which has been established that there would be some minor adverse residual effects on heritage assets during construction, operation and decommissioning phases of the Projects.
- 305. A summary of the findings of this chapter for onshore archaeology and cultural heritage is presented in **Table 22-18**.
- 306. In accordance with the assessment methodology presented in section 22.4.3, this table should also be used in conjunction with the additional narrative explanations provided in section 22.7.
- 307. The impact assessment as presented in this chapter assumes that activities associated with construction may theoretically occur anywhere within the Onshore Development Area.
- 308. With respect to direct physical effects (i.e. buried and above ground heritage assets) further refinement of the Onshore Development Area down to the DCO application boundary (typically 100m wide onshore export cable route) will seek to further avoid known heritage assets, where possible within the confines of other environmental and engineering constraints. In addition, with the implementation and completion of post-consent mitigation, it is not anticipated that there will be residual impacts on the heritage significance of heritage assets with archaeological interest greater than minor adverse.
- 309. Heritage setting assessment work is ongoing, and final impact assessment and summaries / conclusions have not yet been conducted or drawn for individual heritage assets that are currently under consideration in this PEIR chapter. The settings assessment will be progressed and reported on in full in the final DCO application. The significance of effect presented in **Table 22-18**, therefore, represents a preliminary worst case scenario.

Table 22-18 Summary of Potential Likely Significant Effects on Onshore Archaeology and Cultural Heritage

Potential Impact	Receptor	Sensitivity	Magnitude of Impact	Pre-mitigation Effect	Mitigation Measures Proposed	Residual Effect
Construction						
Impact 1: Direct physical impact on designated heritage assets	Known designated heritage assets	Medium - High	No impact	N/A	N/A	N/A
Impact 2: Direct physical impact on non-designated heritage assets	Known and potential buried archaeological and geoarchaeological / palaeoenvironmental remains and above ground heritage assets	Low - High	High Adverse	Moderate - Major Adverse	Further programmes of survey and evaluation to inform a mitigation strategy for either preservation in situ or preservation by record i.e. archaeological excavation, geoarchaeological / palaeoenvironmental assessment or watching brief.	Following the application of appropriate and proportionate evaluation and mitigation approaches, to be agreed in consultation with the ETG, the residual impact is anticipated to be reduced (or offset) to an impact significance level of minor adverse , as a worst case scenario.
Impact 3: Indirect physical impact on designated heritage assets	Deposits associated with designated heritage assets Vibration affecting designated heritage assets	Medium - High	No impact	N/A	N/A	N/A
Impact 4: Indirect physical impact on non-designated heritage assets	Known palaeoenvironmental and geoarchaeological deposits	Low - Medium	Medium Adverse	Moderate Adverse	A programme of Geoarchaeological / Palaeoenvironmental survey to inform any mitigation requirements .	Following the application of appropriate and proportionate mitigation approaches, to be agreed in consultation with the ETG, the residual impact is anticipated to be reduced (or offset) to an impact significance level of minor adverse as a worst case scenario.
	Vibration affecting non-designated heritage assets	Low - High	Negligible	Minor Adverse	N/A	

Potential Impact	Receptor	Sensitivity	Magnitude of Impact	Pre-mitigation Effect	Mitigation Measures Proposed	Residual Effect
Impact 5: Temporary change to the setting of designated heritage assets	Known designated heritage assets	Medium - High	Anticipated to be Low Adverse as a worst case scenario	Moderate Adverse as a worst case scenario	Next steps moving from PEIR to final DCO application include further site visits and/or revisits in respect of the proposed DCO boundary. As well as the application of LVIA toolkits (i.e. ZTVs and photomontages).	To be confirmed in ES. However, the residual impact is anticipated to be reduced to minor adverse, as a worst case scenario, following the application of appropriate and proportionate mitigation approaches, to be agreed in ongoing consultation with the ETG.
Impact 6: Temporary change to the setting of non-designated heritage assets	Known non-designated above ground heritage assets	Low - High	Anticipated to be Low Adverse as a worst case scenario	Moderate Adverse as a worst case scenario	Next steps moving from PEIR to final DCO application include further site visits and/or revisits in respect of the proposed DCO boundary. As well as the application of LVIA toolkits (i.e. ZTVs and photomontages).	To be confirmed in ES. However, the residual impact is anticipated to be reduced to minor adverse, as a worst case scenario, following the application of appropriate and proportionate mitigation approaches, to be agreed in ongoing consultation with the ETG.
Operation						
Impact 7: Permanent change to the setting of designated heritage assets	Known designated heritage assets	Medium - High	Anticipated to be Medium Adverse as a worst case scenario	Major Adverse as a worst case scenario	Next steps moving from PEIR to final DCO application include further site visits and/or revisits in respect of the proposed DCO boundary and specific associated infrastructure (e.g. onshore substation location). As well as the application of LVIA toolkits (i.e. ZTVs and photomontages).	To be confirmed in ES. However, the residual impact is anticipated to be reduced in the majority of cases to minor adverse, as a worst case scenario, following the application of appropriate and proportionate mitigation approaches, to be agreed in ongoing consultation with the ETG.
Impact 8: Permanent change to the setting of	Known non-designated above ground heritage assets	Low - High	Anticipated to be Medium Adverse as a worst case scenario	Major Adverse as a worst case scenario	Next steps moving from PEIR to final DCO application include further site visits and/or revisits in respect of the proposed DCO	To be confirmed in ES. However, the residual impact is anticipated to be reduced in the majority of

Potential Impact	Receptor	Sensitivity	Magnitude of Impact	Pre-mitigation Effect	Mitigation Measures Proposed	Residual Effect
non-designated heritage assets					boundary and specific associated infrastructure (e.g. onshore substation location). As well as the application of LVIA toolkits (i.e. ZTVs and photomontages).	cases to minor adverse, as a worst case scenario, following the application of appropriate and proportionate mitigation approaches, to be agreed in ongoing consultation with the ETG.
Decommissioning						
No decision has been made regarding the final decommissioning policy, as it is recognised that industry best practice, rules and legislation change over time. The decommissioning methodology would need to be finalised nearer to the end of the lifetime of the project so as to be in line with latest and current guidance, policy and legislation at that point. Any such methodology would be agreed with the relevant authorities and statutory consultees. It is anticipated that the decommissioning impacts could be similar in nature to those of construction, depending on the extent and depths to which any further intrusive sub-surface decommissioning groundworks may occur.						



References

Air Photo Services Ltd (2023) Dogger Bank South Offshore Wind Farms. Appendix 22.2: Assessment of Airborne and Satellite Remote Sensing Data and Map Regression Analysis for Archaeology.

AOC Archaeology (2023a) Dogger Bank South Offshore Wind Farms. Appendix 22.5: Geoarchaeological Desk Based Assessment.

AOC Archaeology (2023b) Dogger Bank South Offshore Wind Farms. Appendix 22.6: Archaeological Geophysical Survey.

CIfA (2020) Standard and Guidance for Historic Environment Desk-Based Assessment. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf. Accessed: 21/12/2022.

CIfA (2022) Code of Conduct: Professional Ethics in Archaeology. Available at: <https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2022.pdf>. Accessed: 21/12/2022.

Department for Business, Energy & Industrial Strategy (2021a) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf. Accessed 21/12/22.

Department for Business, Energy & Industrial Strategy (2021b) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf. Accessed 21/12/22.

Department for Business, Energy & Industrial Strategy (2021c) Draft National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015238/en-5-draft-for-consultation.pdf. Accessed 21/12/22.

Department of Culture, Media and Sport (2010). Scheduled Monuments: Identifying, protecting, conserving and investigating nationally important archaeological sites under the Ancient Monuments and Archaeological Areas Act (1979).

Department of Energy and Climate Change (2011a) Overarching National Policy Statement for Energy (EN-1). Presented to Parliament pursuant to Section 5(9) of the Planning Act 2008. The Stationary Office, London.

Department of Energy and Climate Change (2011b) National Policy Statement for Renewable Energy Infrastructure (EN-3). Presented to Parliament pursuant to Section 5(9) of the Planning Act 2008. The Stationary Office, London.

Department of Energy and Climate Change (2011c) National Policy Statement for Electricity Networks Infrastructure (EN-5). Presented to Parliament pursuant to Section 5(9) of the Planning Act 2008. The Stationary Office, London.

Department for Levelling Up, Housing and Communities and Ministry of Housing Communities and Local Government (2014) Planning Practice Guidance: Conserving and enhancing the historic environment.

East Riding of Yorkshire Council (2016) East Riding of Yorkshire Local Plan 2012-2029: Strategy Document.

Forestry Commission & Natural England (2022) Ancient woodland, ancient trees and veteran trees: advice for making planning decisions.

Historic England (2021) Commercial Renewable Energy Development and the Historic Environment. Historic England Advice Note 15. Available at: <https://historicengland.org.uk/images-books/publications/commercial-renewable-energy-development-historic-environment-advice-note-15/heag302-commercial-renewable-energy-development-historic-environment/>. Accessed 01/12/2022.

Historic England (2019) Piling and Archaeology. Guidance and Good Practice. Available at: <https://historicengland.org.uk/images-books/publications/piling-and-archaeology/heag270-piling-and-archaeology/>. Accessed 01/12/2022.

Historic England (2017a) The Setting of Heritage Assets. Historic Environment Good Practice Advice in Planning Note 3 (Second Edition). Available at: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/>. Accessed: 01/12/2022.

Historic England (2017b) Understanding Place. Historic Area Assessments. Available at: <https://historicengland.org.uk/images-books/publications/understanding-place-historic-area-assessments/heag146-understanding-place-haa/>. Accessed: 01/12/2022.

Historic England (2016) Preserving Archaeological Remains. Decision-taking for Sites under Development . Available at: <https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/heag100a-preserving-archaeological-remains/>. Accessed: 01/12/2022.

Historic England (2015a) The Historic Environment in Local Plans. Historic Environment Good Practice Advice in Planning: 1. Available at: <https://historicengland.org.uk/images-books/publications/gpa1-historic-environment-local-plans/gpa1/>. Accessed: 01/12/2022.

Historic England (2015b) Making Significance in Decision-Taking in the Historic Environment. Historic Environment Good Practice Advice in Planning: 2. Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/>. Accessed: 01/12/2022.

Historic England (2012) East Riding of Yorkshire, Chalk Lowland, and the Hull Valley National Mapping Programme (NMP): Aerial Investigation and Mapping Report.

Historic England (2008) Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment. Available at: <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic->

environment/conservationprinciplespoliciesandguidanceapril08web/. Accessed: 01/12/2022.

Humber Field Archaeology (2009) Rapid Coastal Zone Assessment: Yorkshire and Lincolnshire [data-set]. York: Archaeology Data Service [distributor] <https://doi.org/10.5284/1000071>. Accessed: 01/12/2022.

IEMA, IHBC and ClFA (2021) Principles of Cultural Heritage Impact Assessment in the UK. Available at: https://www.archaeologists.net/sites/default/files/j30361_iema_principlesofchia_v8.pdf. Accessed: 01/12/2022.

Ministry of Housing, Communities & Local Government (2018) Conserving and enhancing the historic environment. Planning Practice Guidance.

Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework (revised).

Natural Environment Research Council (NERC) (2022) British Geological Viewer. [online] Available at: <https://geologyviewer.bgs.ac.uk/?_ga=2.129218380.1559078007.1662368063-578434938.1662368063> [Accessed 21/12/2022].

Orsted (2021). Hornsea Project Four: Environmental Statement (ES). Volume A3, Chapter 5: Historic Environment. Available at: <https://infrastructure.planninginspectorate.gov.uk/wpcontent/ipc/uploads/projects/EN010098/EN010098-000719-A3.5%20ES%20Volume%20A3%20Chapter%205%20Historic%20Environment.pdf> [accessed 08.02.23].

Planning (Listed Buildings and Conservation Areas) Act (1990).

Royal HaskoningDHV (2023a) Dogger Bank South Offshore Wind Farms. Appendix 22.1: Onshore Archaeological Desk-Based Assessment.

Royal HaskoningDHV (2023b) Dogger Bank South Offshore Wind Farms. Appendix 22.3: Heritage Walkover Survey Report.

Royal HaskoningDHV (2023c) Dogger Bank South Offshore Wind Farms. Appendix 22.4: Initial Setting Assessment of Substation Zones 1 and 4.

**RWE Renewables UK Dogger
Bank South (West) Limited**

**RWE Renewables UK Dogger
Bank South (East) Limited**

**Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire, SN5 6PB**

