FIVE ESTUARIES OFFSHORE WIND FARM

ENVIRONMENTAL STATEMENT

VOLUME 6, PART 2, CHAPTER 7: ARCHAEOLOGY AND CULTURAL HERITAGE

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DEFINITION OF ACRONYMS

Term	Definition
AOD	above Ordnance Datum
APS	Air Photo Services
bgl	below ground level
CIfA	Chartered Institute for Archaeologists
DBA	Desk-Based Assessment
DCO	Development Consent Order
EACN	East Anglia Connection Node
ECC	Export Cable Corridor
EHER	Essex Historic Environment Record
EIA	Environmental Impact Assessment
ES	Environmental Statement
GPA3	Historic Environment Good Practice Advice in Planning Note 3
HDD	Horizontal Directional Drilling
HER	Historic Environment Record
MDS	Maximum Design Scenario
NMP	National Mapping Programme
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPS EN-1	Overarching National Policy Statement for Energy (EN-1)
NPS EN-3	National Policy Statement for Renewable Energy (EN-3)
NPS EN-5	National Policy Statement Electricity Networks Infrastructure (EN-5)
NSIP	Nationally Significant Infrastructure Project
OnSS	Onshore Substation
OS	Ordnance Survey
OSP	Offshore Substation Platform
OWFs	Offshore Windfarms

Term	Definition
PEIR	Preliminary Environmental Impact Report
TCC	Temporary Construction Compound
SoS	Secretary of State
WSI	Written Scheme of Investigation
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

GLOSSARY OF TERMS

Term	Definition
Archaeological interest	There will be archaeological interest in a heritage asset if it holds or potentially holds, evidence of past human activity worthy of expert investigation at some point (NPPF 2023; Annex 2 Glossary)
Conservation (for heritage policy)	The process of maintaining and managing change to a heritage asset in a way that sustains and where appropriate, enhances its significance (NPPF 2023; Annex 2 Glossary)
Designated heritage asset	A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation (NPPF 2023; Annex 2 Glossary)
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact in question with the sensitivity of the receptor in question, in accordance with defined significance criteria.
ES	An Environment Statement consists of the documents that collate the processes and results of the Environment Impact Assessment.
Heritage asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing) (NPPF 2023; Annex 2 Glossary)
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged and landscaped and planted or managed flora (NPPF 2023; Annex 2 Glossary)
Historic Environment Record (HER)	A historic environment record is the store for systematically organised information about the historic environment in a given area and can be accessed by anyone. It is maintained and updated for public benefit.
Horizontal Directional Drilling (HDD)	Horizontal Directional Drilling is a trenchless crossing technique.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial,

Term	Definition
	resulting from the activities associated with the construction, operation and maintenance, or decommissioning of the project.
Maximum Design Scenario (MDS)	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures, or commitments, are commitments made by the project to reduce and/or eliminate the potential for significant effects to arise as a result of the project.
Onshore Export Cable Corridor (Onshore ECC)	The proposed cable route which represents a corridor within which the cable trenching, haul road and stockpiling areas associated with cable construction, will be located.
Onshore Substation (OnSS)	Where the power supplied from the wind farm is adjusted (including voltage, power quality and power factor as required) to meet the UK System-Operator Transmission-Owner Code (STC) for supply to the East Anglia Connection Node (EACN) Substation
PEIR	Preliminary Environmental Information Report. The PEIR was written in the style of a draft Environmental Statement (ES) and formed the basis for statutory consultation
Order Limits	The extent of development including all works, access routes, TCC's, visibility splays.
Setting	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the assets and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral (NPPF 2023; Annex 2 Glossary)
Significance (for heritage policy)	The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage assets physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each sites Statement of Outstanding Universal Value forms part of its significance.

7 ARCHAEOLOGY AND CULTURAL HERITAGE

7.1 INTRODUCTION

7.1.1 This chapter assesses the likely significant effects of the Five Estuaries Offshore Wind Farm (VE) with respect to onshore archaeology and cultural heritage. This chapter considers the effects of the development upon onshore heritage assets and the ability to appreciate and experience the significance of those assets. The assessment of effects to offshore archaeology and cultural heritage is considered within Volume 6, Part 2, Chapter 11: Offshore Archaeology and Cultural Heritage.

7.1.2 This chapter should be read in conjunction with:

- Volume 6, Part 2, Chapter 1: Offshore Project Description;
- Volume 6, Part 3, Chapter 1: Onshore Project Description;
- Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment;
- Volume 6 Part 6, Annex 7.2: Onshore Geophysical Survey;
- Volume 6, Part 6 Annex 7.3: Geoarchaeological Desk-Based Assessment;
- Volume 6, Part 6 Annex 7.4: Archaeological and Geoarchaeological Monitoring of Ground Investigation Works (Landfall Area);
- Volume 6, Part 6, Annex 7.5: GPA3 Exercise and Technical Note (Offshore Array);
- Volume 6, Part 6, Annex 7.6: GPA3 Exercise and Technical Note (Onshore Project Area);
- Volume 6 Part 6, Annex 7.7: Archaeological and Geoarchaeological Monitoring of Ground Investigation Works (Onshore ECC);
- Volume 6 Part 6, Annex 7:8: Archaeological and Palaeolithic Evaluation: Phase 1
- Volume 6, Part 6, Annex 7.9: Archaeological and Palaeolithic Evaluation: Phase 2
- Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints
- Volume 9, Report 23: Outline Written Scheme of Investigation
- Volume 6, Part 3, Chapter 2: Onshore Landscape and Visual Impact Assessment;
- Volume 6, Part 2, Chapter 10: Seascape Landscape and Visual Impact Assessment; and
- Volume 6, Part 2, Chapter 11: Offshore Archaeology and Cultural Heritage.

7.1.3 Archaeology and cultural heritage are synonymous with the term “historic environment” as used in the Overarching National Policy Statement (NPS) for Energy (Department for Energy Security and Net Zero (DESNZ) 2023, (NPS EN-1). This is defined at paragraph 5.9.2 as *‘All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.’*

7.1.4 Following a summary of relevant policy and legislation, this chapter describes the baseline data gathering exercise (sources and methods used), assessment methodology and sets out the overall baseline conditions. An assessment of the likely significant effects of the development is then presented. The chapter sets out any proposed mitigation, concludes with a summary of residual effects (after application of proposed mitigation) and an evaluation of their significance.

7.1.5 Some of the issues discussed in this chapter will cross-refer with discussion in other chapters. While the assessment presented here relates to the terrestrial historic environment as defined by statute, policy and regulatory definition, it may be useful to make reference to other chapters (and supporting visualisations and figures), most notably Volume 6, Part 3, Chapter 2: Onshore Landscape and Visual Impact Assessment and Volume 6, Part 2, Chapter 10: Seascape Landscape and Visual Impact Assessment and Volume 6, Part 2, Chapter 11: Offshore Archaeology and Cultural Heritage. Specific cross references are included within the text where appropriate.

7.1.6 Compensatory measures are proposed at an onshore location for Lesser Black Backed Gull (LBBG) to compensate for the predicted worst-case impacts of VE on this species in relation to Habitats Regulation Assessment. Further details of the location of these measures and an assessment of the potential impacts are available in Volume 6, Part 8: LBBG EIA.

7.2 STATUTORY AND POLICY CONTEXT

7.2.1 It is necessary to include the national and local planning policy and context in order to set an appropriate scope for the assessment reported in this Environmental Statement and to be able to understand the acceptability of VE in policy terms. The importance of the historic environment is recognised in legislation and heritage assets that are deemed to be of particular importance are given legal protection. Relevant policy and statutory considerations are set out in Table 7.1.

7.2.2 The assessment of the potential impacts of VE upon archaeology and cultural heritage has been made with reference to the UK government NPS(s). The NPS(s) set out policies or circumstances that the UK Government considers should be taken into account in decisions on Nationally Significant Infrastructure Projects (NSIPs). Those relevant to VE are:

- Overarching NPS for Energy (EN-1) (DESNZ 2023);
- NPS for Renewable Energy Infrastructure (EN-3) (DESNZ 2023b); and
- NPS for Electricity Networks Infrastructure (EN-5) (DESNZ 2023c).

7.2.3 NPS EN-1 sets out that a heritage asset is an element of the historic environment which has sufficient archaeological, historic or artistic/architectural interest to be considered within the planning process (DESNZ 2023). The sum of the heritage interests of a heritage asset is referred to as its significance.

7.2.4 This concept is entirely distinct from the assessment of level of significance of effects in Environmental Impact Assessment (EIA) terms. Consequently, where necessary and to avoid confusion, the term ‘heritage significance’ is used when referring to the sum of the heritage interests of a heritage asset. For clarity, the level of significance of effect being assessed is the degree to which the interest in/value of a heritage asset (the sum of which is expressed as heritage significance) and the ability to understand and appreciate those interests, is affected by the proposed development.

Table 7.1: Legislation and policy context.

Legislation/ policy	Key provisions	Section where provision addressed
The Infrastructure Planning (Decisions) Regulations 2010	Requires decision makers to have regard to the desirability of preserving: > Listed buildings, any features which contribute to their special interest and their settings; > Scheduled monuments and their settings; and > The character and appearance of conservation areas.	The information required for decision makers to discharge their duty is provided in Section 0-7.12.
Ancient Monuments and Archaeological Areas Act 1979	Provides for sites assessed to be of national importance to be included within the Schedule of Monuments. These sites are accorded statutory protection and Scheduled Monument Consent is required before any works are carried out.	Reference has been made to the schedule of monuments as set out in the National Heritage List for England, maintained by Historic England, in developing the scope of this assessment.
Planning (Listed Buildings and Conservation Areas) Act 1990	Provides for a list of buildings of special architectural or historic interest. The buildings included within this list are classified as Grades I, II* and II and are accorded statutory protection. More highly graded buildings (Grade I and II*) are differentiated from Grade II buildings in NPS-EN1 (5.9.29-30). Areas of special architectural or historic interest can be designated as conservation areas. Requires decision-makers to have special regard to the desirability of preserving (a) building	Reference has been made to the list of designated assets as set out in National Heritage List for England maintained by Historic England in developing the scope of this assessment. Note that for the Development Consent Order (DCO) application, the requirements of the Infrastructure Planning (Decisions) Regulations (2010)

Legislation/ policy	Key provisions	Section where provision addressed
	or its setting or any features of special architectural or historic interest which it possesses, and to preserving or enhancing the character and appearance of conservation areas.	and NPSs takes precedence where provisions differ.
The Hedgerow Regulations 1997 (as amended 2002)	Set out criteria for identifying important hedgerows and required consent for their removal. Selection criteria include heritage-based considerations. Removal of an important hedgerow is deemed as permitted where a DCO which would require removal of a hedgerow has been granted.	The potential presence of important hedgerows under the Hedgerow Regulations 1997 (amended 2002) is considered in Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment and assessed in Paragraph 7.10.60.
The Protection of Military Remains Act 1986	The Protection of Military Remains Act 1986 sets out specific protections for aircraft which have crashed while in military service or vessels which have sunk or been stranded while in military service. It sets out a general prohibition on any disturbance or removal of such remains without a licence granted by the Secretary of State (SoS).	No known areas where military remains (as defined by the act) have been identified in the onshore project area.
NPS EN-1	The NPS discuss the generic impacts on the historic environment associated with the construction, operation and decommissioning of energy infrastructure. The NPS sets out the need to consider the impacts on both designated and non-designated heritage assets (NPS EN-1 paragraphs 5.9.1-5.9.8).	Effects on designated and non-designated heritage assets are considered at Sections 0-7.12.
NPS EN-1	Where non-designated heritage assets of archaeological interest are of equivalent significance to Scheduled Monuments or Protected	Cropmarks identified as a potential henge to the south of Little Bromley have been put forward for designation as a

Legislation/ policy	Key provisions	Section where provision addressed
	Wreck Sites, they are subject to the policy considerations that apply to designated heritage assets (NPS EN-1 paragraph 5.9.6).	scheduled monument by Historic England in recognition of the likely high heritage significance of this henge. As such this asset has been treated the same as a designated archaeological asset and included as part of the assessment of setting in Section 7.10-7.12 and Volume 6, Part 6, Annex 7.6: GPA3 Exercise and Technical Note (Onshore project area). As the design has developed, the Onshore ECC has been refined to avoid this asset and as such will be preserved in situ.
NPS EN-1	Non designated heritage assets of lesser significance should be considered within any decision making (NPS EN-1 paragraph 5.9.7).	Effects to non-designated heritage assets have been considered in Sections 0-7.12.
NPS EN-1	The applicant should carry out appropriate desk-based assessment and where desk-based assessment is insufficient, field survey may be required to inform any assessment of significance (NPS EN-1 paragraph 5.9.11).	The assessment of significance has been informed by field surveys walkover survey, geophysical survey, archaeological and geoarchaeological monitoring of Ground Investigation works and archaeological and Palaeolithic evaluation works at the OnSS. Following the staged approach to the archaeological assessment, these surveys (Volume 6, Part 6, Annex 7.1-7.4 and 7.7-7.9) have informed the need for and scope of further field investigations in consultation with the statutory consultees. Post-consent

Legislation/ policy	Key provisions	Section where provision addressed
		assessment and mitigation measures are presented within the Outline Written Scheme of Investigation (WSI) (Volume 9, Report 23: Outline WSI).
NPS EN-1	Any application should contain sufficient information to allow the impact of the proposed development on the heritage significance of assets to be understood (Draft NPS EN-1 paragraph 5.9.12). It goes on to say that *'studies will be required on those heritage assets affected by noise, vibration, light and indirect impacts, the extent and detail of these studies will be proportionate to the significance of the heritage asset affected'* (paragraph 5.9.12).	The heritage significance of heritage assets is set out in Sections 7.10-7.12 and has been informed by desk-based studies, supplemented by walkover survey and specific receptor visits as well as geophysical survey, monitoring of GI works and archaeological and Palaeolithic evaluation. Effects such as noise, vibration and light have been considered as part of the assessment of indirect effects in Section 7.10 as appropriate.
NPS EN-1	Development which would give rise to substantial harm to Grade II Listed Building or Grade II registered park and garden should be exceptional, or for heritage assets of the highest significance (Grade I and II* listed buildings, scheduled monuments, designated battlefields, world heritage sites, Grade I and II* registered parks and gardens) should be wholly exceptional (NPS EN-1 paragraph 5.9.30).	No cases have been identified where substantial harm to the heritage significance of a designated heritage asset (a Moderate or Major adverse effect in EIA terms) would arise.
NPS EN-1	Development giving rise to substantial harm to a designated heritage asset should only be permitted where necessary to deliver substantial	No cases have been identified where substantial harm to the heritage significance of a designated heritage

Legislation/ policy	Key provisions	Section where provision addressed
	public benefits which outweigh the harm occasioned (NPS EN-1 paragraph: 5.9.31).	asset (a Moderate or Major adverse effect in EIA terms) would arise.
NPS EN-1	Not all elements of a conservation area or World Heritage Site necessarily contribute positively to significance and the contribution of parts of such designations which may be affected should be considered (NPS EN-1 paragraph 5.9.34)	The contribution of different elements of a conservation area have been considered within the assessment and within Volume 6, Part 6, Annex 7.5: GPA3 Exercise and Technical Note (Offshore Array) and Annex 7.6: GPA3 Exercise and Technical Note (Onshore project area) as appropriate. No World Heritage Sites lie within the Study Areas considered.
NPS EN-1	Provisions for the recording of at risk heritage assets to mitigate against loss of evidential interest are set out at NPS EN-1 paragraphs 5.9.16-5.9.21).	Mitigation proposals have regard to the provisions of NPS-EN-1 and Draft NPS-EN1 and are set out in the Outline WSI (Volume 9, Report 23: Outline WSI).
NPS EN-1	The nature of the significance of the heritage assets and the value that they hold for this and future generations should be taken into account in considering the impact of a proposed development on any heritage assets (Draft NPS EN-1 paragraph 5.9.24).	The assessment presented in Sections 0-7.12 has regard to the significance of heritage assets.
NPS EN-1	Development giving rise to substantial harm to a designated heritage asset should only be permitted where necessary to deliver significant public benefits which outweigh the harm occasioned. The NPS EN-1 goes on to say; 'unless it can be demonstrated that the substantial harm to or loss of significance is necessary to	No cases have been identified where substantial harm to or loss of a designated heritage asset (Major or Moderate adverse effect in EIA terms) would arise.

Legislation/ policy	Key provisions	Section where provision addressed
	achieve substantial public benefits that outweigh that harm or loss or all of the following apply; > The nature of the asset prevents all reasonable usage of the site; > No viable uses of the heritage asset can be found in the medium term through appropriate marketing that will enable its conservation; > Conservation by grant funding or some form of not for profit, charitable or public ownership is not demonstrably possible; and > The harm or loss is outweighed by the benefit of bringing the site back into use (paragraph 5.9.31).	
NPS EN-3	NPS EN-3 contains no specific policy on onshore archaeology and cultural heritage, referring back to the generic policies in NPS EN-1 section 5.9, and specifically refers back to NPS EN-1 for the consideration of elements of the marine historic environment which are, at present located onshore (NPS EN-3 2.8.177).	The approach taken and assessment presented in this chapter follows the provisions within NPS EN-1.
NPS EN-5	Archaeology is considered in NPS EN-5 when weighing up the use of overhead lines and underground cables. The consideration of effects to below ground archaeological remains is	The Onshore Export Cable will be underground cables rather than overhead lines as set out in Volume 6, Part 3, Chapter 1: Onshore Project Description. The approach taken and assessment

Legislation/ policy	Key provisions	Section where provision addressed
	balanced against the visual effects of using overhead lines.	presented in this chapter follows the provisions within NPS EN-1.
National Planning Policy Framework (NPPF); Section 16 Conserving and Enhancing the Historic Environment (2023)	The NPPF does not set out policy for the testing of Nationally Significant Infrastructure Projects (NSIPs). However, Section 16 of NPPF relates to the historic environment and is broadly consistent with the policies of NPS EN-1.	The approach taken and assessment presented in this chapter is broadly consistent with the NPPF, but where the requirements deviate from NPS EN-1, provisions within the NPS have been followed.
Tendring District Local Plan 2013-2033 and Beyond	Objective 7 relates to conserving and enhancing the historic environment, including listed buildings and their settings, heritage assets, landscapes, links and views.	The approach taken and assessment presented is consistent with this objective, but where the requirements deviate, provisions from the NPS EN-1 have been followed.
Tendring District Council 2013-2033 and Beyond	Policy SPL3 sets out the requirements for Sustainable Development and in relation to the historic environment states that *'the design and layout of the development maintains or enhances important existing site features of landscape, ecological, heritage or amenity value'*.	The approach taken and assessment presented is consistent with this policy, but where the requirements deviate, provisions from the NPS EN-1 have been followed.

7.2.5 Further guidance on the application of the policies set out in NPPF are contained within National Planning Practice Guidance (PPG), which contains a specific section on conserving and enhancing the historic environment (Ministry of Housing, Communities and Local Government 2019).

7.2.6 Relevant best practice standards and guidance are published by the Chartered Institute for Archaeologists (CIfA). For the purposes of this assessment the relevant standards and guidance comprise;

- Standard and Guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (2020); and
- Standard and Guidance for Historic Environment Desk-Based Assessment (2020).

7.2.7 Relevant guidance prepared by CIfA has been used within the technical annexes which support this chapter specific to those surveys. These include;

- Standard for Archaeological Field Evaluation (2023);
- Universal Guidance for Archaeological Field Evaluation (2023)
- Standards and Guidance for Archaeological Geophysical Survey (2020);
- Standard for Archaeological Monitoring and Recording (2023); and
- Universal Guidance for Archaeological Monitoring and Recording (2023).

7.2.8 In collaboration with IEMA and IHBC, CIfA have also produced '*Principles of Cultural Heritage Impact Assessment in the UK*' (2021) which has also been followed.

7.2.9 A number of Historic England guidance documents are relevant to this assessment and the technical appendices, these include;

- Managing Significance in Decision-Taking in the Historic Environment, Historic Environment Good Practice Advice in Planning Note 2 (2015);
- The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3 (2nd Edition, 2017);
- Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019);
- Preserving Archaeological Remains, Decision Taking for Sites under Development (2016); and
- Geoarchaeology, Using Earth Sciences to Understand the Archaeological Record (2015).

7.3 CONSULTATION

7.3.1 Consultation with regard to the scope of the archaeology and cultural heritage assessment has been undertaken via the Scoping Report (2020), the Evidence Plan Process and statutory consultation as required by the Planning Act 2008.

7.3.2 A Scoping Opinion was sought from the Planning Inspectorate (PINS) in September 2021. The Scoping Opinion which includes responses from Historic England and Essex County Council relevant to this assessment, identifies areas of the assessment methodology for further consideration (November 2021).

7.3.3 The VE statutory consultation ran from 14 March to 12 May 2023. The Preliminary Environmental Impact Report (PEIR) was published as part of the formal consultation which provided preliminary information on archaeology and cultural heritage within Volume 3, Chapter 7: Onshore Archaeology and Cultural Heritage of the PEIR.

7.3.4 Given the changes in the project design between PEIR and ES, some areas of land will be affected differently by the proposals than consulted on at PEIR. Changes were made following feedback from the PEIR consultation, increased understanding of the local environment from dedicated surveys and coordination work with the North Falls project. To comply with the requirements of the Planning Act 2008, a targeted consultation was held with those affected by the changes from 5 December 2023 to Wednesday 31 January 2024.

7.3.5 Table 7.2 provides a summary of the Scoping Response provided by PINS received in November 2021 and the statutory consultation responses received in May 2023.

Table 7.2: Summary of consultation relating to onshore archaeology and cultural heritage

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
November 2021 PINS Scoping Response	Construction phase; assessment of setting of assets greater than 500 m from the cable corridor. The inspectorate agrees that assets beyond 500 m away may be scoped out the assessment. However, the report does not consider the potential for construction traffic to impact on the settings of assets. The study area should therefore consider a buffer around the construction traffic affected road network.	The Study Area for the assessment of indirect effects arising from temporary construction activities comprises a 500 m buffer from the proposed Order Limits. This boundary includes all areas for construction access points, temporary construction compounds, construction zones for the OnSS and Onshore ECC. Indirect effects arising from construction effects are assessed in paragraphs 7.10.62 to 7.10.77.
November 2021 PINS Scoping Response	Operational Phase; settings of assets greater than 2 km from OnSS. The inspectorate notes that 2 km is a considerable distance so agrees that this matter can be scoped out of further assessment, subject to the ES including a ZTV which demonstrates that 2 km is sufficient distance to avoid effects to the setting of heritage assets. In the event that this cannot be achieved, the ES should include an assessment of these matters or evidence demonstrating agreement with the relevant consultation bodies and the absence of likely significant effect on the environment.	Due to the flat topography of the landscape surrounding the OnSS, the ZTV could not demonstrate that theoretical visibility would not occur beyond 2 km. As effects to the significance of heritage assets arising from change within their setting is not based entirely on intervisibility (although this is a consideration), the theoretical visibility of the OnSS from surrounding heritage assets beyond 2 km does not automatically result in a harmful effect. As such all designated assets will be considered to 2 km and highly designated assets (Grades I, II* listed buildings, Scheduled Monuments and Grade I, II* registered parks and gardens) are considered to 5 km.
November 2021 PINS Scoping Response	Additional sources of information listed by Historic England and Essex County Council should be taken into account.	These sources have been considered and taken into account. These are listed in Section 7.4.6 and in the Annexes as appropriate.
November 2021 PINS Scoping Response	Additional guidance documents listed by PINS (prepared by IEMA and Historic England) should be taken into consideration.	These guidance documents have been taken into consideration and are listed in Section 7.2.7 and referenced as appropriate in the Annexes.
November 2021 PINS Scoping Response	Desk-Based Assessment should include an assessment of the Palaeolithic/Pleistocene potential of the area to inform baseline conditions due to the importance of these deposits.	The Geoarchaeological Desk-Based Assessment, Volume 6, Part 6, Annex 7.3, includes an assessment of Palaeolithic/Pleistocene deposits prepared by a geoarchaeological palaeolithic specialist.
November 2021 PINS Scoping Response	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 trial trenching along the route and substation) and agree a mitigation strategy that can be submitted with the DCO application. An appropriate evaluation technique will need to be defined with the statutory consultees and technical reports provided with the ES.	The assessment of effects within this ES chapter is based upon information collected as part of the baseline which comprises desk-based studies, monitoring of GI works, geophysical surveys, and archaeological and Palaeolithic evaluation at the OnSS (Volume 6, Part 6, Annexes 7.1-7.4, 7.7-7.9). This has been undertaken in consultation with the statutory consultees through the scoping process and Expert Topic Group meetings and follows the staged approach to the assessment of archaeological remains with the results of the initial surveys informing the need for and scope of further assessment. An Outline Written Scheme of Investigation (WSI) has been prepared in consultation with the statutory consultees which sets out details of post-consent assessment and mitigation measures (Volume 9, Report 23: Outline WSI).
November 2021 PINS Scoping Response	The Scoping Report states that *'where it is found that the proposed change to the setting will not affect the significance of specific assets this will be noted in the ES and no further assessment of those assets undertaken'*. Justification should be provided in the ES to support screening out of assets from further detailed assessment.	Justification is provided for the screening out of assets within Volume 6, Part 6, Annex 7.5:Onshore Cultural Heritage: GPA3 Exercise and Technical Note- Offshore Array, for those relating to effects arising from the offshore array and within Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage: GPA3 Exercise and Technical Note-Onshore Project Area, for those relating to effects arising from the onshore construction activities and operational OnSS.
November 2021 PINS Scoping Response	The Applicant should ensure that those assets making up the coastal asset clusters are listed within the ES. Given the number of assets within Harwich, the applicant may wish to consider this as an additional cluster.	The assets considered as part of the coastal asset groups are listed within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage: GPA3 Exercise and Technical Note-Offshore Array, as part of the settings assessment exercise. Harwich has been included as an additional coastal asset group as part of this work and a wireline has been prepared from the High Lighthouse at Harwich to inform the assessment.
November 2021 PINS Scoping Response	The Inspectorate considers that there is potential for effects to below ground heritage assets arising from changes to groundwater levels and/or movement of water through	Effects arising from changes to water levels/movement of water levels through deposits has been assessed in Section 0.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	deposits. The applicant should ensure that all relevant indirect impacts are agreed with consultation bodies and assessed in the ES where significant effects are likely to occur.	
November 2021 PINS Scoping Response	The scoping report states that mitigation of unavoidable direct physical impacts will be designed following the EIA and detailed within a WSI. Where reliance is placed upon the use of a specific method as mitigation, the applicant should ensure that such commitments are appropriately defined and secured.	Mitigation measures for unavoidable effects to archaeological remains are defined in the Outline WSI (Volume 9, Report 23: Outline WSI). This will be supplemented by detailed WSI's for each phase of investigation as these come forward for completion, post-consent. A draft of the Outline WSI was provided to consultees for comment prior to submission.
November 2021 PINS Scoping Response	The Scoping Report proposes to limit the cumulative effects on coastal assets to wind farm developments only. All types of plans and projects should be considered in the assessment of cumulative impacts where significant effects are likely to occur.	The cumulative effects assessment has considered wind farm developments for the assessment of cumulative effects on coastal assets. Other onshore developments within the vicinity of the proposed Order Limits have been considered for cumulative effects arising from the activities within the proposed Order Limits. No likely significant effects as a result of the development have been identified as part of the assessment and as such no cumulative effects to the coastal assets as a result of the other wind farm developments have been identified. This is presented in Section 7.13.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The applicants should be using the Historic Environment Characterisation study within this assessment.	The Essex Historic Landscape Characterisation and the Tendring District Historic Environment Characterisation Project have been used as part of Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment. The Tendring Geodiversity Characterisation Report has been used as part of the Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	Should the historic town of Harwich be treated as a separate entity within this section. It is also an important Port as well as being an important historic asset.	Harwich has been included as one of the Coastal Asset Groups within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Offshore Array. A wireline from Harwich High Lighthouse has also been prepared to support the assessment. This is presented in Appendix 2 of Volume 6, Part 6, Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Offshore Array.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	This should include the Harwich redoubt.	The Harwich redoubt has been considered as part of the Coastal Asset Group for Harwich within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Offshore Array.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	This should also contain the setting guidance produced by Historic England if this is to be integrated with the heritage and cultural section.	The Historic England Guidance *'The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3'* (2017; Second edition) has been used for the assessment presented in Section 7.100 and 7.11 and for the assessment of setting presented in Volume 6, Part 6 Annexes 7.5 and 7.6.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The document needs to ensure that the most up to date version of the NPPF is used (July 2021).	Since the Scoping Response was prepared the NPPF has been updated (December 2023). The most up to date version of NPPF (December 2023) has been used for this assessment and for the preparation of the Annexes 7.1-7.9 as appropriate.
November 2021 Essex County Council	The assessment needs to take into account the Tendring Historic Environment Characterisation and Tendring Geoarchaeological Characterisation documents in assessing the study area.	The Essex Historic Landscape Characterisation and the Tendring District Historic Environment Characterisation Project have been used as part of Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment. The Tendring Geodiversity Characterisation

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Scoping Response (Archaeology and Historic Environment)		Report has been used as part of the Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The assessment needs to include a separate geoarchaeological desk-based assessment to assess the Palaeolithic/Pleistocene potential of the area due to the importance of these deposits within the study area. This should provide details of the scope for assessment of any significant geoarchaeological remains prior to any construction. The landfall area is the most sensitive area in the whole county for early archaeological deposits.	The Palaeolithic/Pleistocene deposits have been assessed as part of Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment. This has provided an assessment of the likely deposits which may exist within the route and an assessment of their significance. This has been used to inform the assessment of direct effects to these deposits in Section 0.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	Any ground investigation works carried out for engineering purposes would be of use and relevance to the geoarchaeological assessment and it is highly recommended that this be combined with the geoarchaeological assessment if possible. The results of any geotechnical boreholes should be made available to the specialist employed to carry out the assessment.	Geotechnical investigations were undertaken in April and May 2022 and in April and May 2023 in specific parts of the route and were monitored under watching brief conditions by a geoarchaeologist. The results of the monitoring are presented within Volume 6, Part 6, Annex 7.4: Archaeological and Geoarchaeological Monitoring of Ground Investigation Works and Annex 7.7: Archaeological and Geoarchaeological Monitoring of Ground Investigation Works. The results have also been used to inform the assessment of effects to geoarchaeological remains in Section 0.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	Need to define an appropriate evaluation technique for those areas where there are direct impacts where no information is at present available. A programme of trial trenching will be needed to help define those deposits identified from aerial photographic assessment as well as blank areas on the route of the cable route. This information should be provided with the DCO submission.	The geophysical survey of the route has covered all of the areas within the proposed Order Limits that are suitable for survey and where land access could be granted. This is approximately 85% of the Onshore ECC and TCCs (excluding the landfall zone) as well as the OnSS area. The results are presented within Volume 6, Part 6, Annex 7.2. Trial trenching and Palaeolithic test pit evaluation has been undertaken at the OnSS area. The results of these surveys have informed the assessment of effects presented within this chapter and are presented within Volume 6, Part 6, Annex 7.8 and 7.9 Archaeological Evaluation. The width of the cable corridor maintains flexibility to avoid significant archaeological remains should such remains be discovered during the post-consent phase of assessment or during mitigation works.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The success of this mitigation will be dependent on the quality of the initial evaluation work completed for the DCO application.	Assessment work provided as part of the DCO application has been undertaken in consultation with statutory consultees to ensure the appropriateness of the final baseline on which the ES assessment is based. In terms of the quality of the assessment work provided, all work has been undertaken in line with current good practice, CIfA guidelines and with the agreement and in consultation with statutory consultees. These surveys were agreed with Essex County Council and Historic England prior to the works taking place to ensure the quality of the baseline surveys. The Outline WSI (Volume 9, Report 23: Outline WSI) which presents the post-consent assessment and mitigation measures has also been provided to the consultees for comment ahead of submission.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	This work should include aerial photographic assessment and rectification which also includes an assessment and plotting of any available LiDAR data and provides a GIS dataset of all cropmark features within the Study Area. This would allow more accurate location of any targeted trenches.	Aerial photographic assessment and rectification has been carried out by Aerial Photographic Services (APS) who also included an assessment of LiDAR data. A GIS dataset has been provided of the cropmarks identified and will be used in the targeting of trial trenches. The APS assessment is provided as Appendix A to Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	Also there is a need for a separate geoarchaeological desk-based assessment.	A separate Geoarchaeological Desk-Based Assessment has been provided at Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment.

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November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	There will need to be separate Written Schemes of Investigation for the evaluation work as this will need to be undertaken for the DCO. Only once this is completed can an appropriate understanding of the impact be agreed and a mitigation strategy designed.	Separate Written Schemes of Investigation have been prepared for the geophysical surveys, archaeological and geoarchaeological watching brief and the archaeological trial trenching and test pitting undertaken for the DCO application. These were agreed with the statutory consultees ahead of these works taking place. The results of these surveys have been used to inform the ES and the Outline WSI for post-consent assessment and mitigation (Volume 9, Report 23: Outline WSI).
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	There does need additional data sources comprising the characterisation work that has been undertaken in Tendring. There is also the Palaeolithic assessment undertaken by ECC for Essex which should be used to inform likely impacts and help the production of a geoarchaeological Desk-Based Assessment (DBA).	The Essex Historic Landscape Characterisation and the Tendring District Historic Environment Characterisation Project have been used as part of Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment. The Tendring Geodiversity Characterisation Report has been used as part of the Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment. 'Managing the Essex Pleistocene' prepared by Essex County Council was also used as part of the geoarchaeological desk-based assessment (Annex 7.3).
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	A digital rectification of aerial photographic evidence will be necessary to accurately identify the location of cropmarks so that a programme of trial trenching can define extent and significance of these.	Aerial photographic assessment and rectification has been carried out by Aerial Photographic Services (APS). A GIS dataset has been provided of the cropmarks identified and will be used in the targeting of trial trenches. The APS assessment is provided as Appendix A to Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	For those elements scoped in there under 20.1 there needs to be an assessment of potential for new sites within the DBA which should be gleaned from the various characterisation projects and reports available. Also, it will be that all the work described is completed and submitted with the DCO submission.	The potential for as yet unknown archaeological remains has been predicted on the basis of a number of sources including the Historic Environment Record, the characterisation projects, aerial photographs, LiDAR which have been synthesised as part of the Archaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.1). In addition to this, results of the geophysical surveys and archaeological evaluation have also been used to identify any previously unknown sites. These data sources have informed the assessment of potential new archaeological sites that have not yet been discovered.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The Joint Councils raise no problem from a below ground archaeological viewpoint for those elements identified for scoping out.	This has been noted.
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	The mitigation measures can only be agreed once the applicants have an understanding of the impact of the scheme. A range of options will be available once this detail is known.	The Outline WSI (Volume 9, Report 23: Outline WSI) has been informed by the intrusive and non-intrusive survey undertaken for the DCO application. This outlines the approach to post-consent assessment and options for mitigation measures. The Outline WSI has been provided to the statutory consultees prior to submission for comment. Mitigation proposals take account of the impacts anticipated based on the design of the proposals for the DCO application, whilst retaining flexibility for the final siting of the cable route in the detailed design phase post-consent. The anticipated effects of the proposals are laid out in Table 7.6
November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	Specific requirements for this section is to provide a clear understanding of the impacts on the known deposits (this will involve the addition to the present DBA of a geoarchaeological assessment and an aerial photographic assessment), assess the impact of the route on previously unknown deposits (geophysics and trial trenching along the route and substation), and agree a mitigation strategy that can be submitted with the DCO application.	An Outline WSI for further post-consent assessment and mitigation has been prepared and submitted with the DCO (Volume 9, Report 23: Outline WSI). Consultees were invited to comment on a draft of this Outline WSI and amendments were made following the comments received. Specific comments relating to details of the proposed works will be addressed as part of the detailed WSI(s) post consent. The archaeological assessment and mitigation strategy has been designed based upon the information from the completed surveys for the DCO application.

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November 2021 Essex County Council Scoping Response (Archaeology and Historic Environment)	It is noted that within Section 20 that the potential cost of archaeological investigation is raised. However, should works be conjoined, this would reduce significantly.	The project has co-ordinated with the North Falls OWF project as appropriate for both the intrusive and non-intrusive surveys and through the Evidence Plan Process where possible.
November 2021 Essex County Council Scoping Response (Built Heritage)	It is agreed that heritage assets with historic functional relationships with the coast and sea may be more susceptible to the change within their settings resulting from the proposal. The list within this paragraph includes port facilities, lighthouses, and military sites but assets relating to leisure uses connected with the coast and seaside resorts could also be more susceptible than other assets. For example, the registered park and garden at Clacton Seafront Gardens.	Heritage assets with functional relationships with the coast and sea have been included for assessment as well as those relating to leisure uses of the historic seaside resorts. These are presented within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage: GPA3 Exercise and Technical Note- Offshore Array and include the registered park and garden at Clacton Seafront Gardens.
November 2021 Essex County Council Scoping Response (Built Heritage)	It would be helpful to agree a list of viewpoints requiring wirelines or photomontages to better assess the impact of the proposal on heritage assets.	Some of the viewpoints prepared as part of the Seascape, Landscape and Visual Impact Assessment (Volume 6, Part 2, Chapter 10) and Onshore Landscape and Visual Impact Assessment (Volume 6, Part 3, Chapter 2) are appropriate for the assessment of impact on heritage assets. Following the section 42 response on the preliminary assessment, heritage specific visualisations and wirelines have been agreed and prepared to support the assessment. These are presented in Appendix 2 of Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage: GPA3 Exercise and Technical Note-Offshore Array and Volume 6, Part 6, Annex 7.6. Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Onshore Project Area.
November 2021 Essex County Council Scoping Response (Built Heritage)	Harwich may be a potential addition to this table of 'coastal asset clusters' and potentially Clacton on Sea although this is just outside the Coastal Study Area.	Harwich and Clacton on Sea have been included as coastal asset groups considered as part of Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage: GPA 3 Exercise and Technical Note-Offshore Array.
November 2021 Essex County Council Scoping Response (Built Heritage)	Mitigation measures should be developed once the impact of the proposal is fully understood, as per step 4 of *Good Practice Advice in Planning 3.*	The design of the proposals (density, height and extent of the array to be occupied) will take into account a number of concerns including the potential effects on heritage significance. The assessment presented in this document has not identified any likely significant effects upon the heritage significance of any assets from the presence of the WTGs nor the OnSS (Section 0-7.12). Consequently, no specific mitigation is considered necessary.
November 2021 Historic England Scoping Response	We note that a precautionary approach is taken in defining a 60 km search radius around the study area. Given the estimated maximum rotor tip height of 397 m, which is very high, we would recommend that the search radius for cultural heritage is extended to 70 km, and should include highly graded heritage assets, for example, on the Dengie Peninsula.	The 60 km radius for the assessment of effects arising from the offshore array was extended to 70 km following the Scoping Opinion. Highly graded assets upon Dengie Peninsula were also included, although these lie outside of the 70 km radius. The initial GPA3 scoping exercise presented within Volume 6, Part 6, Annex 7.5 includes the highly graded assets at the Dengie Peninsula and selected assets out to 70 km.
November 2021 Historic England Scoping Response	It is likely that the proposed onshore substation will have an impact on the significance of designated and non-designated heritage assets, in terms of the changes to their settings and their relationships to the wider landscape. We recommend a ZTV is produced in relation to the designated heritage assets, and any significant historic landscape elements, and used to inform the selection of potential viewpoints to assess the impact of the proposed substation on the setting of heritage assets. The assessment should define a study area according to the sensitivity of the receiving environment and the potential impacts of the project.	A ZTV for the OnSS has been prepared as part of the LVIA assessment and has been used to inform the assessment of effects presented in Section 7.11 and that presented in Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Onshore Project Area. Following comments received as part of the section 42 consultation, heritage specific visualisations have been prepared for Little Bromley Henge and scheduled monument 'Cropmarks S of Ardleigh'. The study area has been defined based upon the sensitivity of the assets and potential impacts and consists of a 2 km study area for all designated heritage assets (and selected non-designated heritage assets) and a 5 km study area for highly graded assets between 2-5 km from the OnSS.

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November 2021 Historic England Scoping Response	We would be pleased to advise on the area of study for designated heritage assets and the extent of the ZTV once the scoping area has been narrowed down. We note that a 2 km buffer has been proposed but the zone of theoretical visibility could be considerably larger- and this cannot be agreed until the location of the proposed substation has been published. We look forward to constructive engagement with the Applicant to agree the proposed key viewpoints for visualisations.	The study areas for the assessment were presented at the Expert Topic Group in November 2022 for agreement with the consultees. Following comments received as part of the section 42 consultation, additional cultural heritage specific visualisations have been prepared in addition to the LVIA visualisations.
November 2021 Historic England Scoping Response	The setting of heritage assets is not just restricted to visual impacts and other factors should be considered, in particular noise, vibration, light, odour, traffic assessments, during construction and operation. Where relevant, the cultural heritage chapter should also be cross-referenced to other relevant chapters, and we advise that all supporting technical heritage information is included as appendices.	The assessment of effects upon the heritage significance of assets arising from development within their setting is not limited to simple intervisibility, and intervisibility between the proposals and an asset does not automatically equate to harm to significance. Other factors have been considered as part of the assessment of the effects for the construction phase such as noise, dust, light and traffic. These factors are addressed within the text assessment presented in Section 7.10 and 7.11 where appropriate and supported by the assessment within Volume 6 Part 6, Annex 7.5 and Annex 7.6. Cross references have been made where appropriate in particular to the Onshore Landscape and Visual Impact Assessment chapter (Volume 6, Part 3, Chapter 2) and Seascape, Landscape and Visual Impact Assessment chapter (Volume 6, Part 2, Chapter 10).
November 2021 Historic England Scoping Response	We consider the analysis of setting (and the impact upon it) as a matter of qualitative and expert judgement which cannot be achieved solely by use of systematic matrices or scoring systems. Historic England, therefore, recommends that these should be in an appendix and seen only as material to support a clearly expressed and non-technical narrative argument within the cultural heritage chapter. The EIA should use the ideas of benefit, harm and loss to set out 'what matters and why' in terms of the heritage asset's significance and setting together with the effects of the development upon them.	The analysis of setting has been based upon professional judgement and asset specific site visits. The scoring systems and matrices have been adjusted to more closely account for the nuances associated with the assessment of setting. Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage: GPA 3 Exercise and Technical Note- Offshore Array and Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage: GPA3 Exercise and Technical Note-Onshore Project Area provide an assessment of the assets identified within the study areas and describes the assets, their setting, their significance and the contribution of setting to that significance. A rationale is then provided as to whether the asset is likely to be affected by the proposals and requires further, more detailed narrative assessment within the chapter. The methodology used as part of this chapter equates the levels of harm as per NPPF to the effects considered in EIA terms (paragraph 7.5.19). The assessment within the chapter is provided in Sections 0 (construction effects) and 7.11 (operational effects). This includes as appropriate discussion and narrative to justify the assessments reached. The language used necessarily reflects the requirements of the EIA Regulations and as used in NPS EN 1, to demonstrate compliance with the relevant planning processes.
November 2021 Historic England Scoping Response	The appreciation of the value of the historic environment should not rely solely on an appreciation of the location of the designated heritage assets but consider the interactions with the wider landscape.	The setting of the asset is the surroundings within which the asset is experienced (and within which the interests from which the heritage significance of the asset is derived can be appreciated). As such a consideration of the interactions of the asset with the wider surroundings has been considered, where such wider surrounding can be considered to form part of an asset's setting, in a way that contributes to that asset's heritage significance. This is presented in Volume 6, Part 6, Annexes 7.5 and 7.6 and in Sections 0 and 7.11 of this Chapter.
November 2021 Historic England Scoping Response	The assessment should be prepared and submitted following the approach set out in Historic Environment Good Practice Advice in Planning Note 3, The Setting of Heritage Assets 2017.	The assessment of the effects of the proposals upon the heritage significance of an asset arising from change within setting has followed the staged process presented in Historic Environment Good Practice Advice in Planning Note 3, The Setting of Heritage Assets 2017. This is presented in Volume 6, Part 6, Annexes 7.5 and 7.6 and in Paragraphs 7.4.18 to 7.4.21 below.

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November 2021 Historic England Scoping Response	We would expect the scoping area to be narrowed down at an early stage in the project, prior to submission of the scoping report. Consequently, we would recommend that the scoping exercise for onshore work is repeated once the grid access has been determined.	The Area of Study (AoS) presented as part of the Scoping Report was narrowed down for the assessment at PEIR and further refined as the proposed Order Limits for the ES. The baseline data and preliminary assessments presented in Volume 6, Part 6, Annexes 7.1-7.9 have been based upon the proposed Order Limits to inform the assessment of effects.
November 2021 Historic England Scoping Response	We are aware that the location of the proposed substation will not be confirmed by National Grid until Q1/2 2022. Consequently, we are concerned to ensure there is adequate time to undertake, in particular, a programme of onshore archaeological assessment that we believe is necessary to support the DCO application.	National Grid has since defined a Substation search area to the west of the proposed OnSS location. This was further refined to the EACN substation zone in summer 2023. The National Grid EACN zone is included within the proposed Order Limits to ensure that the connection point to the EACN substation falls within the proposed Order Limits. This has allowed sufficient time for non-intrusive and intrusive surveys for the VE OnSS to take place ahead of the submission of the DCO application.
November 2021 Historic England Scoping Response	Table 20-1 [of the scoping report] lists the resources used as part of the assessment. It may be useful to include the Historic England Archaeology Mapping Explorer as well. It should be noted that an updated version of the Regional Research Framework is available online.	The Archaeological Mapping Explorer and the updated Regional Research Framework have been used as part of the Archaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment), to inform the baseline and assessment of significance.
November 2021 Historic England Scoping Response	The potential impacts of the proposed development have been provided in Table 20-3 and includes the direct and permanent impacts as a result of the construction. We would highlight that damage may also occur to waterlogged archaeological and palaeoenvironmental remains if there are changes to groundwater levels or if heat is emitted from buried cables.	Changes to waterlogged archaeological and palaeoenvironmental remains as a result of changes to groundwater levels or if heat is emitted from buried cables are considered within Section 0 of this chapter.
November 2021 Historic England Scoping Response	The ES should provide a detailed archaeological baseline; only a detailed and comprehensive understanding of the below ground archaeological resource will allow for impact to heritage to be properly mitigated. There is significant potential for further nationally important sites to be discovered within the scoping area. We also have concerns around the impact of the onshore cable route, the area of the proposed substation and in the areas of construction compounds and laydown areas.	The detailed archaeological baseline for the ES is provided within Volume 6, Part 6, Annexes 7.1-7.4 and 7.7-7.9.
November 2021 Historic England Scoping Response	We would recommend that the resolution of the baseline information is considered carefully. For example, the resolution of 1 m is the basic minimum needed for archaeological assessments using LiDAR, but where greater detail is required, higher resolution would be preferable.	The LiDAR analysis has used the highest resolution available for the tiles that cover the route corridor. This ranged between 0.25 m to 2 m resolution. A gazetteer of the LiDAR tiles used for the baseline assessment and their resolution is provided within Appendix 9 of the APS report (Appendix A, Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment).
November 2021 Historic England Scoping Response	For the ES desk-based assessment, this should also include the dataset from CITiZAN. In terms of aerial photographs, all potential archaeological features recorded by aerial photography in the scoping area should be accurately plotted and assessed.	The CITiZAN data has been used as part of the Archaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment). All potential archaeological features identified as part of the APS work has been plotted and assessed within Appendix A of Volume 6, Part 6 Annex 7.1: Archaeological Desk-Based Assessment).
November 2021 Historic England Scoping Response	We welcome the proposed programme of archaeological evaluation, comprising geophysical survey followed by archaeological trial trenching. We note however the proposal for only targeted geophysical survey and trial trenched evaluation identified through desk-based collation.	Geophysical survey over all of the areas suitable for survey, where access could be granted has been undertaken for the ES. This amounts to approximately 85% of the Onshore ECC and TCCs (excluding the landfall zone), as well as the OnSS area. There are some areas that were unsuitable for survey such as roads, wooded areas, watercourses, farmsteads and edges of fields and other areas which were restricted by landowner access. Subsequent trial trenching and Palaeolithic test pit evaluation has been focussed upon the OnSS area. The remainder of the route retains enough flexibility that archaeological remains can be avoided if necessary.
November 2021 Historic England Scoping Response	In our opinion, the geophysical survey should be undertaken across the DCO application area to ensure the nature, extent and survival of subsurface archaeological and geoarchaeological remains are established and presented in the ES. This will enable an appropriate scheme of mitigation to be prepared. We recommend that all supporting	The geophysical survey has been completed over all of the areas suitable for survey and amounts to approximately 85% of the Onshore ECC and TCCs as well as the OnSS area. to the results have been used to inform this assessment and the post-consent assessment and mitigation measures presented in the Outline WSI (Volume 9, Report 23: Outline

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	technical heritage information (full survey reports) is included as appendices to allow the information to be critically assessed.	WSI). The geophysical survey report is presented in Volume 6, Part 6, Annex 7.2: Onshore Geophysical Survey. Other supporting baseline assessments are provided in Annexes 7.1-7.9.
November 2021 Historic England Scoping Response	We also recommend trial-trenched evaluation should be carried out in the area of the proposed substation and in the areas of construction compounds, as well as in pinch-point locations along the proposed onshore cable route and to test the results of any significant concentrations of archaeological remains.	Archaeological trial trench evaluation and Palaeolithic test pit evaluation has been undertaken at the OnSS in two phases. The results of these surveys have informed the assessment and are presented in Annexes 7.8 and 7.9.
November 2021 Historic England Scoping Response	We acknowledge that mitigation of unavoidable direct physical impacts will include archaeological investigation, recording, analysis and dissemination of the results. This will be designed following the EIA and detailed within a WSI. We are pleased to see that any required fieldwork will be designed in a WSI and we look forward to commenting on these documents in due course.	The Outline WSI contains details of post-consent assessment surveys and a suite of options for mitigation measures. A draft of the Outline WSI was provided to statutory consultees ahead of the submission of the DCO application, for comment.
November 2021 Historic England Scoping Response	We would also recommend that specialist palaeoenvironmental assessment is undertaken where the desk-based assessment and other surveys indicate that there is potential for the survival of Palaeoenvironmental remains.	Geoarchaeological Palaeolithic test pits were undertaken within the OnSS area, as part of the archaeological evaluation works. The results of these surveys are provided within Volume 6, Part 6, Annex 7.8 and 7.9.
November 2021 Historic England Scoping Response	We recommend that geoarchaeological considerations and requirements are built into any geotechnical investigations that are carried out to ensure that opportunities are maximised where possible. This should include providing the geoarchaeologist with direct access to core material rather than just the logs or to extruded samples.	Monitoring of geotechnical works was undertaken in April-May 2022 and April-May 2023 and the results of this are presented in Volume 6, Part 6, Annex 7.4 and Annex 7.7. It is intended that, if appropriate, any additional post-consent geotechnical investigations will also be monitored by a geoarchaeologist.
November 2021 Historic England Scoping Response	The onshore scoping area also has potential for encountering Pleistocene and Holocene deposits of archaeological significance. Consequently, we recommend that a Palaeolithic Desk-Based Assessment is also prepared. The nature and scope of specialist palaeolithic survey and assessment should be devised through consultation with the archaeological advisors at Essex Place Services.	The Geoarchaeological Desk-Based Assessment presented in Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment has been prepared by a palaeolithic specialist.
November 2021 Historic England Scoping Response	An effective method for identifying the potential depth and character of Palaeolithic archaeology would be to undertake a preliminary deposit model as part of the desk-based assessment.	The Geoarchaeological Desk-Based Assessment presented in Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment includes a preliminary deposit model, based upon the available information.
November 2021 Historic England Scoping Response	The deposit model will also help to guide elements of the proposed mitigation strategy, such as the choice of geophysical survey techniques that are utilised. For example, techniques that investigate deeper deposits of archaeological interest should be considered such as electromagnetic induction (EMI) or electrical resistivity (ERT).	The Geoarchaeological Desk-Based Assessment has been used to guide the choice of further assessment and mitigation proposed in discussions with the statutory consultees. This is presented within the Outline WSI (Volume 9, Report 23: Outline WSI).
November 2021 Historic England Scoping Response	It is noted that the VE connection cables will be underground (buried) between the landfall and the grid connection point and it stated that VE is committed to considering trenchless technologies such as HDD. If this technique is to be used, the potential issues associated with bentonite slurry outbreak will need to be considered in terms of impact (both direct and indirect) that this may have on any buried archaeological remains. This needs to be considered in the ES, and mitigation included in the WSI for archaeological mitigation.	The impacts arising from the use of HDD (or other trenchless technique) has been considered as part of the assessment of direct effects to buried archaeological remains below and has been fed through into the mitigation strategy presented within the Outline WSI (Volume 9, Report 23: Outline WSI).
November 2021 Historic England Scoping Response	It is important to understand how changes to the ground water levels, water quality, or the movement of water through deposits may impact on the historic environment. For example, changes to ground water levels or the mobilisation of contaminants along different pathways may impact on the preservation of archaeological structures, features or remains, including palaeoenvironmental remains. In addition, compression of deposits or the creation of pathways for contaminants or oxygen could potentially damage deposits/remains of archaeological interest or alter the preservation conditions on the site.	Changes to groundwater levels, movement of water through deposits and compression have been considered as part of the assessment of direct effects to archaeological remains, presented in Section 0.

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November 2021 Historic England Scoping Response	Additional works are planned to investigate the hydrology/hydrogeology and geology of the development area; we would recommend that the value of this information to inform the assessment of the historic environment should be considered and discussed with the project archaeological team.	Geotechnical investigations were monitored in April-May 2022 and April-May 2023 (results presented in Volume 6, Part 6, Annex 7.4 and 7.7). It is intended that, if appropriate, any future post-consent geotechnical investigations will also be monitored by a geoarchaeologist.
November 2021 Historic England Scoping Response	The nature and scope of the archaeological evaluation should be devised through consultation with the archaeological advisors at Essex Place Services. We would be pleased to provide any further advice, and comment on the proposed methodology, as well as advising on the significance of the results. In our view, this will provide the Examining Authority with the appropriate level of information to determine the application, confident that the historic environment has been adequately assessed and that the proposed mitigation measures will be effective and proportionate to the significance of heritage assets.	Discussions with the archaeological advisor at Place Services and Historic England have been ongoing throughout the preparation of the DCO application. WSI's for specific surveys have been approved ahead of commencement of surveys and a draft of the Outline WSI was circulated for comment prior to submission of the DCO.
November 2021 Historic England Scoping Response	Considering the amount of evaluation fieldwork that is likely to be required, we strongly recommend that discussions about this fieldwork commence at the earliest opportunity. We also advise that a timetable is agreed for each stage of the assessment process, especially because onshore transmission substation location has yet to be confirmed by National Grid.	Discussions on scope and nature of the archaeological fieldwork have been ongoing throughout the preparation of the DCO application through the Evidence Plan Process and agreement of WSI's ahead of surveys. . Information is not currently available to be able to provide an indicative timetable for the post-consent surveys, however the phasing of the archaeological work and how this will fit into the construction programme is provided. Throughout the course of the preparation of the DCO application National Grid defined a search area for their substation, this allowed the refinement of the design for the VE OnSS substation and the VE OnSS area has subsequently been subject to archaeological trial trench and Palaeolithic test pit evaluation. Assessment of the effects to buried archaeological remains within the proposed OnSS area is provided in Section 7.10.
November 2021 Historic England Scoping Response	Some of the work associated with the proposed Project may impact on the groundwater levels or movement of water though deposits. For example, the need for foundations for the substation, compression of deposits through the construction of elements or the movement of vehicles, the reduction in recharge values, or the need to dewater areas during construction. The impact that this work may have on the historic environment needs to be considered as any changes may affect preservation conditions within the area of the proposed project or in nearby deposits, which in turn may result in the damage and/or loss of archaeological remains.	Effects arising from changes to water levels, compression and dewatering have been considered as part of the assessment of buried archaeological and geoarchaeological remains within Section 0.
November 2021 Historic England Scoping Response	We would recommend that the Historic England document Preserving Archaeological Remains (2016) is referred to aid the discussions of the potential impacts to the historic environment as well as the approaches used to investigate them.	'Preserving Archaeological Remains (2016)' has been used to inform the potential impacts to the archaeological remains that could occur. This assessment of the impacts to buried archaeological remains is presented in Section 0.
November 2021 Historic England Scoping Response	We note the proposed cumulative impact assessment (4.6 and 20.4.–9 - 43). This will need to be considered in terms of cultural heritage once the study area has been narrowed down.	The cumulative assessment is presented within Section 7.13.
November 2021 Historic England Scoping Response	By following planning policy and guidance we would expect the project to be creative in how it might offer opportunities for the enhancement of heritage assets, and how the project might deliver public (heritage) benefit. The ES should aim to make clear public heritage benefits and outreach as part of planned mitigation.	Details for opportunities for enhancement and public benefits have been considered as part of the Outline WSI prepared for the DCO application. This will be in discussion with the archaeological advisors at Essex County Council and Historic England.
November 2021 Historic England	We would advise the ES should put forward proposals for the use, display and interpretation of archaeological evidence that will be revealed by the development and to	Details for opportunities for enhancement and public benefits have been considered as part of the Outline WSI prepared for the DCO application. Detailed proposals will be in

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Scoping Response	provide enhancement to heritage assets and secure wide heritage benefits as part of the Project and we would be pleased to provide advice about potential heritage schemes.	discussion with the archaeological advisors at Essex County Council and Historic England at the relevant time.
May 2023 Essex County Council Section 42. Response	A programme of archaeological trial trenching to cover the pipeline corridor and new substation has been recommended to be completed in advance of the DCO application in order to inform on the extent complexity and significance of any archaeological deposits and to allow for appropriate consideration to be given to the impact of the scheme on the historic environment. Trial trenched evaluation is currently being undertaken across part of the proposed substation site, results of the evaluation will need to be included in the DCO application.	Trial trenching and palaeolithic test pitting has been undertaken in two phases at the OnSS. The results of these surveys have been used to inform the assessment of effects in Section 7.10 and the results of the surveys are provided in Volume 6, Part 6, Annex 7.8 and 7.9.
May 2023 Essex County Council Section 42. Response	The assessment of significance is based on desk-based research and non-intrusive evaluation survey across part of the scheme only, and therefore the potential adverse effect remains difficult to state with confidence	The assessment undertaken at PEIR was based upon the information that was available at the time of writing which comprised desk-based assessment and partial geophysical survey. Since this time the geophysical survey has been completed (Volume 6, Part 6, Annex 7.2: Geophysical Survey Report) and trial trenching and test pitting has been undertaken at the OnSS (Volume 6 Part 6, Annex 7.8 and 7.9). The results of these surveys have been used to inform the assessment of significance of archaeological assets within the proposed Order Limits.
May 2023 Essex County Council Section 42. Response	The extent, nature and significance of the archaeological remains, both onshore and offshore, has not yet been fully determined and it is uncertain that avoidance [of archaeological remains, as the primary mitigation approach] will be a practical option given the engineering requirements of the proposed works. The applicant would be required to conclusively demonstrate that there is potential to avoid impact on any significant concentrations of archaeological remains where preservation would be the most appropriate mitigation strategy.	The Onshore ECC is approximately 90 m wide. The combined open trenching construction corridor for both projects is 60 m wide. This allows enough flexibility for both the Five Estuaries and North Falls project to use this corridor and avoid significant archaeological remains which may be discovered. Should a density of archaeological remains be found which has not been identified through the geophysical survey there is also the option to be able to use HDD (or other trenchless technique) to go beneath the archaeological features, preserving them in situ above.
May 2023 Essex County Council Section 42. Response	Prior to the DCO application we would expect the results of all desk-based assessments and geophysical surveys to be combined in order to identify any concentrations of archaeology which may be difficult to avoid through design. Any areas where there is little or no opportunity through design to avoid these archaeologically sensitive areas would need to be evaluated through a programme of trial trenching prior to the submission of the DCO to ensure that a suitable mitigation strategy including preservation can be proposed.	Throughout the development of the design the results of the emerging geophysical surveys and results of the trial trench evaluation have been overlaid with the results from the Historic Environment Record (HER), National Mapping Programme and aerial photograph analysis. It was through this process that the areas for trial trenching were decided at the OnSS, where there was potential for archaeological remains and greater potential impacts through the construction of the OnSS.. The width of the Onshore ECC retains enough flexibility to be able to avoid significant archaeological remains should this be discovered post-consent. Should extensive archaeological remains of high significance be discovered that covers the entirety of the width of the corridor, the flexibility within the 90m corridor allows the project to consider the use of HDD (or other trenchless technique) to go beneath archaeological deposits or concentrations of features.
May 2023 Essex County Council Section 42. Response	The North Falls OWF will follow the same or very similar Onshore ECC, substations and cable routes. It is unclear how much flexibility in design there will be, with both wind farms following similar designs, with regard to avoiding archaeological remains of high significance where no intrusive archaeological fieldwork has been undertaken. This would be of significance for any Palaeolithic sites which are rare and highly significant.	The Onshore ECC is approximately 90m wide, the combined open trenching construction corridor for both projects is around 60m wide, leaving 30m of flexibility to avoid buried archaeological remains. Should extensive archaeological remains of high significance be discovered that cover the entirety of the width of the corridor, the 90m corridor allows the project to consider the use of HDD (or other trenchless technique) to go beneath archaeological deposits or concentrations of features.
May 2023 Essex County Council Section 42. Response	At present there no proposals for outreach and enhanced public understanding as part of the mitigation beyond appropriate publication of the results of archaeological investigations and archiving. The details of outreach should be included within an Outline Written Scheme on Investigation for both onshore and offshore archaeology.	The Outline WSI (Volume 9, Report 23: Outline WSI) contains some options for outreach and public engagement for the Onshore area. The detail of these activities would be based upon the results of the post-consent surveys and will be further refined following this work. This refinement will be undertaken in consultation with statutory consultees at the appropriate time.

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May 2023 Essex County Council Section 42. Response	RE: Volume 3, Chapter 7: Table 7.8: Additional mitigation relating to cultural heritage and archaeology. '*An agreed programme of archaeological investigation work will be put into place to ensure that any heritage assets or deposits of geoarchaeological/ palaeoenvironmental interest that may be present could be identified and recorded.*' Further details will need to be provided in the ES and the submission of an Outline Written Scheme of Investigation.	Details on the proposed archaeological and geoarchaeological investigation that will take place post-consent are presented within the Outline WSI (Volume 9, Report 23: Outline WSI).
May 2023 Essex County Council Section 42. Response	The geoarchaeology DBA identified that Kesgrave deposits lie at depths that will be impacted upon, in places, by the cable trenches. The discovery and identification of any Palaeolithic and Mesolithic sites within the development area would be considered of high significance. The impact of the whole development on geoarchaeological remains including potential Palaeolithic remains will need to be considered and not just at HDD sites.	The impact of the whole development (not just impacts from HDD/trenchless techniques) upon geoarchaeological and palaeolithic deposits have been considered as part of the assessment presented in Section 7.10.
May 2023 Essex County Council Section 42. Response	Additional next steps are considered necessary in advance of the DCO submission: > Production of report on archaeological trial trenching and geoarchaeological test pits within the SSA West Area. To be submitted as an appendix and results of geoarchaeological test pits to inform on site deposit model and geoarchaeological DBA which should be updated with any relevant information > Illustrative plan of archaeological evidence including geophysics, Aps, HER overlaid and identification of any archaeological sensitive areas (where mitigation by design might not be possible) > Production of Outline WSI to set out approach to assessment and mitigation- this will need to include opportunities for the enhancement of heritage assets, and how the project might deliver public (heritage) benefit. The ES should aim to make clear public heritage benefits and outreach as part of planned mitigation.	The results of the trial trenching and geoarchaeological test pit evaluation are presented in Volume 6, Part 6, Annex 7.8 and 7.9. The geoarchaeological desk-based assessment has been updated with the results of the geotechnical investigations and the results of the test pitting and this updated assessment is presented in Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment. All of the data gathered for the preparation of the chapter has been combined and overlaid within the Archaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.1) to identify areas of archaeological sensitivity. As stated above it is anticipated that mitigation by design will be possible, if required, following post-consent evaluation to confirm the presence and significance of archaeological remains within the Onshore ECC. The Outline WSI (Volume 9, Report 23: Outline WSI) sets out the approach to post-consent assessment and mitigation measures following this. The document also includes outreach and public engagement. Should significant archaeological remains be discovered and preserved in situ as part of the development, an outline for a heritage management plan is also included.
May 2023 Essex County Council Section 42. Response	A map regression should be included in an archaeological DBA which would help identify any heritage assets that may no longer be extant but which may have associated below ground remains. Any assets identified will need to be plotted and listed as an additional heritage asset	A map regression exercise was undertaken as part of the work completed by APS for both the landfall area and the Onshore ECC, to inform the desk-based assessment. This is presented in Volume 6, Part 6, Annex 7.1, Appendix 4, with a description provided in Section 7 and reproduction of the historic maps provided in figures 10-13 (landfall) and figures 10-28 (Onshore ECC).
May 2023 Essex County Council Section 42. Response	Only three boreholes have been monitored and two historic borehole records used to create a stratigraphic model. This would not be considered robust enough to make conclusions across the whole scheme.	The limitations of the geoarchaeological desk-based assessment were acknowledged in the assessment presented at PEIR. The results of additional ground investigations undertaken since PEIR and archaeological and geoarchaeological test pitting at the OnSS have been added to the assessment.
May 2023 Essex County Council Section 42. Response	The report states that the gravel deposits are deeply buried, and conventional archaeological evaluation of this buried land surface is unlikely to be practical. This is based on one borehole record, the geoarchaeological DBA notes that the Kesgrave gravels are present at much shallower depths. The report needs amending to clarify this and should be updated as new information becomes available. A site deposit model across the entire scheme would be beneficial.	The assessment presented at PEIR was based upon the information available at the time of writing. This has since been updated with additional information from GI works and the test pit evaluation.
May 2023 Essex County Council Section 42. Response	The geoarchaeological DBA has presented a very high level assessment based on existing borehole data and desk-based research. It has created a basic deposit model and zoned the route into Geoarchaeological Characterisation Zones. This approach is considered appropriate however the interpretation is based on a limited number of borehole records and should be supplemented with purposive borehole data which includes analysis and interpretation of sediments from the borehole cores. Any geotechnical boreholes taken prior	The geoarchaeological desk-based assessment was based upon information available at the time of writing. Further assessment in the form of purposive boreholes, may be required, and is presented in the Outline WSI to be undertaken post-consent. A geoarchaeologist monitored all geotechnical boreholes undertaken prior to the DCO application. The results of which are presented in Volume 6, Part 6, Annex 7.4 and Annex 7.7.

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	to DCO submission should be monitored by a geoarchaeological specialist in order to refine the model.	
May 2023 Historic England Section 42. Response	We previously advised that resolution of 1m is the basic minimum needed for archaeological assessments using LiDAR, but where greater detail is required, high resolution is preferable. We would, therefore, expect the Onshore ECC and OnSS options to demonstrate that there is sufficiently high LiDAR resolution for the identification of archaeological earthworks.	A total of 73 LiDAR tiles were used for the assessment. 52 of these were 1 m resolution or higher and includes full route coverage from 2018 National LiDAR Programme data. Less than a third of the tiles used were of 2 m resolution. The 2 m resolution dataset is one of the earliest datasets and still provides microtopographic earthwork evidence particularly in Local Relief Modelling which may have been eroded in later datasets and is therefore not discarded from the assessment and is used alongside datasets of a higher resolution to provide context.
May 2023 Historic England Section 42. Response	It should be noted that changes to the water environment that could impact the preservation conditions of nearby archaeological remains/deposits could also result in physical damage and should therefore, be classed as a direct impact. These effects may be felt outside of the red-line boundary.	Potential effects to waterlogged deposits/features within and out with the proposed Order Limits are presented in Section 7.10.4-7.10.6.
May 2023 Historic England Section 42. Response	We are pleased that the potential for previously unknown archaeological remains to be present has been acknowledged but note that the geophysical survey work is currently still ongoing, and so the information presented within the PEIR is incomplete.	The geophysical survey has been completed within all areas with the exception of small areas which were unsuitable for survey (e.g. roads, hedgerows, watercourses, woodland) or restricted by landowner access. This amounts to approximately 85% of the Onshore ECC and TCCs and the OnSS area.
May 2023 Historic England Section 42. Response	We are pleased that the potential impacts to the organic sediments have been discussed in Section 7.10.3 [PEIR], including the potential for compression or dewatering that could lead to the degradation to any remains of archaeological interest. The preparation of the Outline WSI will need to detail how these sorts of deposits will be sampled and investigated, the sort of remains that will be assessed and the techniques that will be applied.	The Outline WSI (Volume 9, Report 23: Outline WSI) includes details of how these deposits will be assessed post-consent and options for mitigation measures to be refined following the post-consent assessment phase.
May 2023 Historic England Section 42. Response	It is acknowledged that there is potential for presently unknown heritage assets to be impacted by the proposed scheme. The nature, form, extent, date and heritage significance is unknown, but it has been argued that it is likely for archaeology of all periods to be present. It is also argued that any archaeology present is likely to be of low-medium significance. These assumptions should be reviewed and refined as the evaluation work continues.	The assumptions made at PEIR have been reviewed following additional information in the form of the GI works, the completion of the geophysical survey and the trial trench evaluation. This has not changed the view that archaeological remains of all periods could be present and that it is likely to be of low-medium significance. This will be kept under review as further assessment is undertaken post-consent and mitigation measures will reflect the extent, date and heritage significance of the archaeological remains identified.
May 2023 Historic England Section 42. Response	The approaches [to mitigation] that may be used are summarised in Section 7.10.53 [PEIR] and include watching briefs, trial trench test pitting, purposive geoarchaeological boreholes, strip, map and sample investigations for formal excavations. The approaches listed are what we would expect but we need to comment on the detail of the Outline WSI when it has been produced.	The Outline WSI (Volume 9, Report 23: Outline WSI) was submitted to the consultees for comment prior to submission and has been updated following the comments received. Specific comments relating to details of the proposed works will be agreed as part of the detailed WSI(s) post consent.
May 2023 Historic England Section 42. Response	In terms of the presentation of Figure 3, Volume 5, Annex 7.1, to avoid confusion we would recommend that the Conservation Areas and Substation Areas are better distinguished, i.e. shaded in different colours on Figure 3	Following the selection of the OnSS location within SSA West. The two SSA's presented at PEIR are no longer required and have been removed from Figure 3 of Volume 5, Annex 7.1. The OnSS zone is now included on the figures.
May 2023 Historic England Section 42. Response	Figure 10 of Volume 5, Annex 7.1 (Air Photo Services) requires a key	All figures prepared by Aerial Photo Services presented in Appendix 4 of Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment have a key.
May 2023 Historic England Section 42. Response	We would recommend that insert maps are provided for Figures 12-23 of Volume 5, Annex 7.1 (Air Photo Services), for each illustration, to show the location of each figure in relation to the wider scheme	The work carried out by Aerial Photo Services was undertaken in 2022 and has not been revisited for the ES.

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May 2023 Historic England Section 42. Response	We note that the historic Ordnance Survey mapping presented for the Onshore ECC (Figures 24-28 of Assessment of Aerial Imagery for Archaeology, Volume 5, Annex 7.1) These maps have been cropped for the Onshore Red Line Boundary. We would recommend these are reproduced for the DCO application as complete maps, i.e. without cropping- to provide context for the ECC. We would also recommend that an insert map is provided for each illustration, to show the location of each figure in relation to the wider scheme.	The historic maps were obtained by APS from a third party provider who are a highly regarded provider of industry standard georeferenced historic OS mapping data. APS balanced project delivery timescale against, project resourcing and the cost of the dataset and chose only the data within the red line. To source whole map sheets from accurately georeferenced and consistently high quality data mosaic would have been economically preclusive to the project budget.
May 2023 Historic England Section 42. Response	The geophysical survey was carried out across a range of environments and deposit types, which may include waterlogged deposits near water channels or in marshes. It would be useful for the completed survey report to state if any areas would benefit from the use of alternative geophysical approaches.	The use of alternative geophysical techniques would be considered during the completion of the remaining areas of geophysical survey prior to detailed design.
May 2023 Historic England Section 42. Response	The report [geoarchaeological desk-based assessment] acknowledges that the data coverage within the scheme is generally poor with only 17 archive boreholes located within or close to the scheme boundary. The conclusions drawn from the preliminary deposit model should, therefore, be used with caution at this stage until additional information is recovered.	The PEIR was based upon the information available at the time and the limitations of the dataset were acknowledged within the assessment. Since the production of the PEIR, additional information from GI works and test pit evaluation has been added to the Geoarchaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.3) and has been used to inform this assessment.
May 2023 Historic England Section 42. Response	Additional geoarchaeological and palaeoenvironmental sampling has been recommended which is welcomed, but we would recommend that additional detail is provided in a method statement about how the deposits will be sampled and assessed.	The Outline WSI (Volume 9, Report 23: Outline WSI) contains a strategy for further geoarchaeological and palaeoenvironmental assessment to be undertaken post-consent. This includes details of how the deposits will be sampled and assessed.
May 2023 Historic England Section 42. Response	We would also recommend that the geoarchaeologists are allowed direct access to, and able to retain when necessary, the geotechnical cores as it is better to record and assess continuous core sequences rather than isolated deposits as this allows for greater reliability and confidence in the resulting conclusions.	During the watching brief on the geotechnical works the geoarchaeologists were allowed direct access to the cores to record and assess the deposits encountered. The assessment and conclusions are presented in the watching brief reports (Volume 6, Part 6, Annex 7.4 and 7.7).
May 2023 Historic England Section 42. Response	We would recommend that the application of scientific dating is considered carefully before the cores are recovered as some of the deposits discussed exceed the upper limits of some dating techniques, such as radiocarbon dating. For these deposits, alternative techniques would be required, such as optically stimulated luminescence dating.	The techniques for scientific dating for the archaeological works undertaken post-consent has been carefully considered during the preparation of the Outline WSI. Consideration of techniques such as optically stimulated luminescence dating has been included should this be necessary.
May 2023 Historic England Section 42. Response	We are pleased to see that geophysical survey techniques such as Electrical Resistivity Tomography have been considered to investigate subsurface structures and lithological changes.	The use of alternative geophysical techniques would be considered during the completion of the remaining areas of geophysical survey prior to the detailed design.
May 2023 Historic England Section 42. Response	We are concerned that no archaeological trial trenching, test pitting or palaeoenvironmental coring has been undertaken at this stage to establish the significance of archaeological remains. Consequently, we consider it premature to assign 'significance of effect' for archaeological remains that have not been fully assessed.	The assessment presented at PEIR was based upon the information available at the time of writing. Since that time, additional GI works, archaeological trial trenching and test pitting have been undertaken and used to inform the significance of effect.
May 2023 Historic England Section 42. Response	We are also concerned by what we consider to be, the limited extent of trial trenching proposed between PEIR and DCO.	The process of baseline characterisation and survey is designed to address the archaeological potential of the proposed Order Limits in a proportionate manner, leading to an appropriate assessment, permitting informed decision making. In order to establish the baseline, the area within the proposed Order Limits has been subject to thorough assessment, informed by appropriate and proportionate levels of survey work. This process has involved, desk-based assessment supported by walkover surveys, geophysical survey of 85% of the Onshore ECC and TCCs and the OnSS area, archaeological and geoarchaeological monitoring of GI works, specific geoarchaeological desk-based assessment and evaluation trenching at an area of key archaeological sensitivity and construction critical location. This substantial body of work is considered to form a proportionate basis upon which to undertake the appropriate assessment presented

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		in this ES. This work and the assessment represent an appropriate and entirely adequate basis upon which to make an informed judgement on the impacts of the development upon heritage significance as well as proposals for the mitigation of identified effects.
May 2023 Historic England Section 42. Response	At this stage no evaluation has been undertaken to test the results of the aerial photography, LiDAR analysis and potential archaeological assets identified as geophysical anomalies, as well as other potential archaeological remains recorded in the HER and to assess the significance of archaeological remains.	The assessment presented at PEIR was based upon the information available at the time of writing. The ES has been informed by archaeological trial trenching and test pitting to inform the assessment of the significance of archaeological remains. In areas where intrusive works have not been undertaken professional judgement has been used to interpret and assign heritage significance in the absence of further information.
May 2023 Historic England Section 42. Response	It is asserted in 7.10.52 that construction activities, with mitigation measures would be reduced to a minor adverse effect. We consider that significance cannot be attributed to unknown archaeological remains; this needs to be evidence based.	Mitigation measures would be tailored to the heritage significance of the archaeological remains discovered. For remains of high significance, avoidance through design would be implemented where possible. Less significant archaeological remains or areas where harm is unavoidable would be mitigated through set piece excavation works or through watching brief as appropriate. These techniques will preserve the archaeological remains by record. The reduction to minor adverse effect acknowledges that archaeological remains will be truncated either through the proposals or through the archaeological intervention, which is itself destructive.
May 2023 Historic England Section 42. Response	We are concerned to ensure the significance of all archaeological remains is adequately established within the proposed development. In particular, we consider the assessment of significance should be established by trial trenching, test pitting and where appropriate palaeoenvironmental coring, prior to DCO submission.	The heritage significance of archaeological remains has been based upon non-intrusive surveys and intrusive surveys within areas of the Onshore ECC and OnSS area. The results of these surveys are presented in Volume 6, Part 6, Annex 7.1-7.4 and 7.7-7.9. As noted above, the approach adopted, and the level of work undertaken to establish the baseline is considered proportionate and the assessment based upon this is entirely adequate and appropriate to allow informed decision making.
May 2023 Historic England Section 42. Response	This is to ensure that archaeological remains of high heritage significance are identified and preserved in situ. This is especially important for parts of the scheme with limited flexibility to relocate works, and thus avoid (and preserve in situ) any archaeological remains of high heritage significance.	The OnSS area has been archaeologically evaluated and the location for the OnSS has been designed to avoid the potential route of the Roman road. The Onshore ECC retains enough flexibility to be able to avoid archaeological remains following post-consent assessment prior to the detailed design. The Onshore ECC for the DCO application is 90m wide. The combined easement for both projects is approximately 60m wide, leaving 30m of flexibility for adjustments to the alignment.
May 2023 Historic England Section 42. Response	We consider that trial trenching evaluation should be carried out, as a minimum, at the locations of the proposed OnSS, as well as the landfall location, construction compounds, and pinch points along the route for example at directional drill access points. We also consider any areas of the ECC where 'hotspots' of archaeological remains have been defined should be also evaluated with trial trenching, if they cannot be avoided and preserved in situ by the scheme.	Trial trench evaluation has been carried out at the OnSS area where archaeological potential was identified through geophysical survey in conjunction with less flexibility to adapt the design to preserve in situ if significant remains were found. A strategy for further assessment post-consent, prior to the detailed design, is presented in the Outline WSI (Volume 9, Report 23: Outline WSI). Mitigation measures, including avoidance of archaeological remains to facilitate preservation in situ, will be designed based upon the results of the assessment.
May 2023 Historic England Section 42. Response	If archaeological evaluation is not undertaken, as recommended, the applicant should provide clear justification in the DCO application for this, i.e. as to why it has not been, or cannot be, undertaken at this stage in the process.	The area within the proposed Order Limits has been subject to thorough assessment, informed by appropriate and proportionate levels of survey work. This process has involved, desk-based assessment supported by walkover surveys, geophysical survey, archaeological and geoarchaeological monitoring of GI works, specific geoarchaeological desk-based assessment and evaluation trenching at an area of key archaeological sensitivity and a construction critical location. This work and the assessment represent an appropriate and entirely adequate basis upon which to make an informed judgement on the impacts of the development upon heritage significance as well as proposals for the mitigation of identified effects.
	We would recommend that the Outline WSI should be supplemented by a detailed WSI prepared for each stage of archaeological investigation by the archaeological organisation commissioned to undertake the work.	A specific WSI would be prepared for each stage of the work as they come forward for completion post-consent. This would be agreed with the Development Control Archaeologist advising the Relevant Planning Authority.

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May 2023 Historic England Section 42. Response	We would recommend there should be provision for public engagement and outreach activities during the investigation as well as provision for the museum-quality display of artefacts and presentation of discoveries revealed by the proposed development.	A suite of options for public engagement and outreach is presented within the Outline WSI (Volume 9, Report 23: Outline WSI). This would be refined post-consent, based upon the findings of the further assessment and mitigation, to ensure that these are presented and interpreted appropriately.
May 2023 Historic England Section 42. Response	In terms of the assessment of indirect impacts [assessment of onshore infrastructure], we would recommend that a ZTV is provided in the Onshore Archaeology and Cultural Heritage Assessment, along with the proposed viewpoints, in relation to highly graded heritage assets	The ZTV prepared for the Landscape and Visual Impact Assessment has been used for the assessment of indirect impacts of the onshore infrastructure. This ZTV is presented in Volume 6, Part 7, Annex 2.1: LVIA Figures.
May 2023 Historic England Section 42. Response	We consider the magnitude of impact should be considered to be medium adverse, resulting in a moderate negative effect significance for the Grade II* listed Church of St Mary, Little Bromley which is significant in EIA terms. We recommend this assessment is revisited in the ES. We recommend that proposals should be put forward by the applicant to mitigate the impact of the OnSS on the significance of this heritage asset.	The assessment of effects has been revisited for the ES following the refinement of the route of the Onshore ECC and the selection of SSA west for the OnSS location. The assessment of effects has remained as a minor adverse effect and details are provided below to support this assessment (paragraphs 7.10.75-7.10.77). Mitigation planting has been proposed to mitigate landscape and visual effects, which include additional planting to screen the OnSS from the surrounding area (with the exception of the tallest parts).
May 2023 Historic England Section 42 Response	We consider the rural, agricultural setting makes a positive contribution to the significance of this monument [Cropmarks S of Ardleigh- Scheduled Monument] and because we consider the proposed development has the potential to result in change to the setting. Moreover, this monument falls within the study area of the OnSS. We recommend therefore, this Scheduled monument is also included in the assessment. We also recommend a visualisation should be prepared for this monument to enable the visual impact of the proposed OnSS (and also the cumulative impact of the North Falls and EACN substations) on the significance of the site to be assessed.	A visualisation for Cropmarks South of Ardleigh has been prepared and includes a cumulative visualisation for North Falls and EACN substations (Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints). Additional assessment of the effects to the significance of this monument arising from the presence of the OnSS has been undertaken within Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Onshore Project Area. No significant effects to the heritage significance of this asset have been identified, however a summary of the assessment presented within the Annex 7.6 has been included within the ES chapter.
May 2023 Historic England Section 42. Response	The presence of this asset [Little Bromley Henge] in the rural agricultural landscape is a rare survival. We consider that setting contributes to its significance, and the monument draws a considerable amount of significance from how it is experienced in the landscape, We also recommend a visualisation should be prepared for this asset, to enable the visual impact of the proposed OnSS (and also the cumulative impact of the North Falls and EACN substations on the significance of the site to be assessed.	A visualisation has been prepared for Little Bromley Henge and presented in Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints. Additional assessment has also been undertaken of the effects to the heritage significance of this asset arising from the presence of the OnSS during the operational phase (Volume 6, Part 6, Annex 7.6). The monument is a below ground archaeological asset and cannot be experienced within the landscape without prior knowledge of its presence. No significant effects to this asset are anticipated, however a summary of the assessment presented within Annex 7.6 is included within the assessment of effects within the ES chapter.
May 2023 Historic England Section 42. Response	We would recommend a ZTV is provided for the cumulative assessment and any additional viewpoints identified and assessed in relation to the highly graded assets	A ZTV has been prepared as part of the landscape and visual impact assessment for the Proposed Development and has been used to inform the assessment of effect in this chapter and Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Onshore Project Area.
May 2023 Historic England Section 42. Response	We would recommend that the section relating to the Historic Environment Settings Analysis-Offshore Array is reviewed and revised, we would recommend a number of heritage visualisations are prepared for the DCO submission.	Volume 6, Part 6 Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note: Offshore Array which contains the assessment of the effects of the offshore array on the heritage significance of onshore heritage assets has been reviewed and revised following the development of the design. A number of wirelines have been prepared to support the assessment of effects presented in this chapter and within Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints.
May 2023 Historic England Section 42. Response	The viewpoint 6 from Aldeburgh is not taken from the gun platform of the Slaughden Martello Tower, which is, in our view the critical viewpoint for this heritage asset. Consequently, we do not consider that this provides an accurate visualisation for the assessment. We would recommend that an additional visualisation is provided for the Martello Tower from the gun platform.	Viewpoint 6 is taken from the beach at Aldeburgh and was used to provide a representative view of how the offshore array would look from Aldeburgh (Volume 6, Part 7, Figure 10.31, VP 6 Aldeburgh). To supplement this, a wireline has been prepared from the position of the Martello Tower and from the height of the gun platform to illustrate heights and positions of the WTGs from the height of the gun platform (Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints).

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		No adverse effect to the heritage significance of the Slaughden Martello Tower was identified at PEIR and following the review of the additional wireline the assessment is considered to remain (i.e. that there is no harm and no effect to the heritage significance of this asset). The assessment of effects is presented in 7.11.49-7.11.53.
May 2023 Historic England Section 42. Response	We note that the viewpoint for the Grade II* listed The Naze Tower. This also appears to be taken from ground level adjacent to the Tower. Again, we would recommend a heritage-specific visualisation is prepared- and assessed- from the top of Naze Tower, which is 26m high. This is because the impact is potentially quite different from a viewpoint at ground level, and this is therefore the location that should be used for the heritage assessment visualisation.	The viewpoint from Naze Tower was taken at ground level from in front of the tower and was used as a representative viewpoint for how the array would look from the asset (Volume 6, Part 7, Figure 10.37, VP 12 The Naze Walton Cliff Top). To supplement this a wireframe from the height of the top of the tower has been provided to inform the assessment (Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints). No adverse effect to the heritage significance of the Naze Tower was identified as part of the PEIR assessment. Following the preparation of the additional wireline did not change the conclusion of the assessment of effects within the ES. The assessment of effects to Naze Tower is provided in paragraphs 7.11.62-7.11.66
May 2023 Historic England Section 42. Response	In Suffolk, neither the Scheduled 'Martello Tower at Bawdsey Beach', 'Martello Tower at Rose Cottage, Bawdsey, nor 'Martello Tower on Golf Course Adjoining Woodbridge Haven', Martello Tower at Shingle Street are not considered in Volume 5, Annex 7.5. We recommend these are added to Table 11 of Volume 5, Annex 7.5 and adequately assessed.	These assets have been included within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Offshore Array within Table 11. The Martello Tower at Rose Cottage and the assets at Bawdsey Manor were also included for narrative assessment within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Offshore Array.
May 2023 Historic England Section 42. Response	We also note that Bawdsey Manor, which is Grade II* listed and forms a group with a number of other heritage assets; we would recommend these are also added to Table 11 of Volume 5 Annex 7.4 adequately assessed. We recommend a heritage specific visualisation from above the cliffs, is prepared in order to enable the visual impact on the Grade II* Listed heritage asset to be accurately assessed.	The assets at Bawdsey Manor have been included within Table 11, Volume 6, Part 6, Annex 7.5. The assessment presented within this chapter does not make an assessment of the 'visual impact' of the proposals on heritage assets. It makes an assessment of the effects of the proposals upon the heritage significance of assets through change within the setting, where this leads to harm to (or reduction in) heritage significance. An assessment of the assets at Bawdsey Manor has been presented within Volume 6, Part 6, Annex 7.5 which follows the steps outlined in the Historic England guidance (The Setting of Heritage Assets, 2017) which outlines the asset, its setting, its heritage significance, the contribution of setting to significance and the effects of the proposals on that significance. No adverse effect to heritage significance is anticipated to occur as part of the proposals.
May 2023 Historic England Section 42. Response	We would recommend Landguard Fort is reassessed and scoped into the assessment. We would recommend a photomontage is provided from one of the most prominent locations, for example, one of the battery installations and not from ground level in front of the Fort.	Additional assessment of Landguard Fort has been provided in Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Offshore Array. A wireframe from the height of one of the battery's has been provided to support the assessment (Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints). As no likely significant effects to the asset are anticipated, this has not been scoped into the chapter.
May 2023 Historic England Section 42. Response	In Essex, there are a number of highly-designated heritage assets along the coast at Harwich that have all been scoped out and no visualisations have been provided for any of these assets. We would recommend that a visualisation is presented from the most prominent asset to allow the visual impact on these assets to be accurately assessed.	The highly designated assets at Harwich lie at a distance of approximately 55km from the array area. These have been subject to assessment within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Offshore Array. The heritage significance of these assets is not considered to be affected by the introduction of the array at this distance from the assets. The presence of the array out to sea will not affect the ways in which the heritage interests which make up the significance of the assets are experienced or appreciated. A wireframe from the height of the High Lighthouse has been prepared and is presented in Volume 6, Part 6, Annex 7.10: Cultural Heritage Wirelines and Viewpoints to support the assessment.
May 2023 Historic England Section 42. Response	We have previously recommended that a photomontage should be prepared from the gun platform of Martello Tower K, Walton on the Naze. Although we acknowledge that the immediate context around the tower has changed, nevertheless, we consider the impact of	A detailed assessment of Martello Tower K is presented within Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Offshore Array. This Martello Tower lies approximately 54km from the Offshore array area. This asset was constructed to protect Walton Mere which lies to the north of the asset. Another tower was

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	the proposed development should be assessed and a visualisation prepared from the gun platform of Martello Tower K.	positioned at Walton sea front to protect the coastal zone; this tower (Tower J) has been demolished. Tower K does not derive its heritage significance from its relationship with the sea or views out to sea, as this would have been the purpose of Tower J. As such, Tower K has been scoped out of assessment within the ES (see assessment in Annex 7.5 for justification) and visualisations of the array were not considered necessary to inform the assessment.
May 2023 Historic England Section 42. Response	Clacton has been scoped out of the assessment. No visualisations have been presented for the highly graded heritage assets to enable the impact to be assessed. We would recommend that a visualisation is provided from the gun platform of at least one Martello Tower at Clacton to enable the impact to be adequately assessed.	The assets at Clacton lie approximately 62km from the array. A visualisation was prepared from Clacton (Volume 6, Part 7, Annex 10.3, Figure 10-45A-F, VP F Clacton on Sea) to provide a representative viewpoint of how the array will look. The visualisation and observations made upon the site visit determined that the array would not be visible even in the clearest conditions over this distance. An assessment of the effects of the array upon the Martello Towers at Clacton is presented in Volume 6, Part 6, Annex 7.5: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Offshore Array. As no likely significant effects are predicted this has not been included within the chapter and a heritage specific visualisation was not considered necessary.

7.4 SCOPE AND METHODOLOGY

SCOPE OF THE ASSESSMENT

IMPACTS SCOPED IN FOR ASSESSMENT

7.4.1 The following impacts have been scoped into this assessment:

- Construction:
  - Direct permanent effects to buried archaeological remains;
  - Direct permanent effects to the historic landscape character (historic hedgerows); and
  - Indirect temporary effects upon heritage significance of assets arising from change within setting.
- Operation and maintenance:
  - Indirect permanent effects associated with the presence of the substation within the setting of heritage assets;
  - Indirect permanent effects upon heritage significance of onshore assets associated with the presence of the offshore Wind Turbine Generators (WTGs); and
  - Indirect permanent effects arising from the change to the historic landscape as a result of the presence of the OnSS.
- Decommissioning:
  - Indirect temporary effects upon heritage significance of assets during decommissioning.

IMPACTS SCOPED OUT OF ASSESSMENT

7.4.2 On the basis of the baseline environment and the project description outlined in Volume 6, Part 1, Chapter 1: Offshore Project Description and in accordance with the Scoping Opinion (PINS, 2021), a number of impacts have been scoped out, these include:

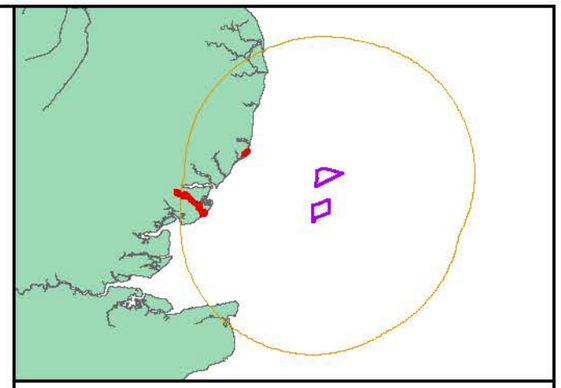
- Construction and decommissioning:
  - Indirect temporary effects arising from change within setting greater than 500 m from the Onshore ECC;
- Operation and maintenance:
  - Indirect permanent effects arising from change within setting to less sensitive (Grade II) designated heritage assets between 2 km- 5 km from the OnSS.

STUDY AREA

7.4.3 A distance based approach was undertaken to define the Study Areas for use within this assessment. The Study Areas defined below are shown on Figure 7.1. For the assessment of effects to below ground archaeological remains a 500 m Study Area has been buffered from the proposed Order Limits. The proposed Order Limits includes the Onshore ECC, the OnSS as well as areas for Temporary Construction Compounds (TCC), working areas and construction and operational accesses, including off route haul roads. The 500 m study area allowed archaeological information on heritage assets within close proximity to the Onshore ECC and OnSS to be collected to fully understand the potential for as yet unrecorded heritage assets to be present within the area which could be affected by the onshore construction of VE.

7.4.4 For the assessment of indirect effects, a 500 m buffer from the proposed Order Limits has been used for the Onshore ECC to encompass assets which could receive effects as a result of the construction of the cable route and associated works. A 2 km buffer has been used for all designated assets within 2 km of the OnSS. In response to concerns expressed as part of the scoping response, this has been extended out to 5 km for highly graded assets (Grade I and II* Listed Buildings, Scheduled Monuments and Grade I and II* Registered Parks and Gardens) as these assets may be more sensitive to change within their setting. This corresponds with the ZTV which also extends 5 km around the OnSS.

7.4.5 For the assessment of indirect effects arising from the offshore WTGs a 70 km study area has been considered as part of the initial assessment presented in Volume 5, Annex 7.6: GPA3 Exercise and Technical Note (Onshore project area). A 60 km study area was proposed as part of the Scoping Report, however due to concerns raised regarding the extent of effects from the increased maximum height of the turbines the initial settings exercise was extended to 70 km. It also includes Dengie Peninsula (which lies beyond 70 km) at the request of the consultees.



LEGEND

- Array Areas
- Proposed Order Limits
- Onshore archaeological remains and inner Onshore Designated Heritage Assets Study Area (500 m and 2 km)
- OnSS Study Area (5 km)
- Offshore Array Coastal Study Area (70 km)

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Array Areas, Proposed Order Limits and Study Areas

VER	DATE	REMARKS	Drawn	Checked
1	13/02/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.1

SCALE:	PLOTSIZE:	DATUM:	PROJECTION:
1:100,000	A3	OSGB 1936	BNG

FIVE ESTUARIES OFFSHORE WIND FARM

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DATA SOURCES

DESK-BASED SOURCES

7.4.6 Many of the technical annexes which support this chapter have been prepared using desk-based sources, these include;

- Essex Historic Environment Record Data;
- National Heritage List for England;
- National Record for the Historic Environment (NHRE) Excavation Index;
- Conservation Area Appraisals;
- Historic and Ordnance Survey maps;
- Published and unpublished documentary sources;
- Landmark data;
- LiDAR data;
- Aerial Photographs;
- Geological mapping and borehole information held by the British Geological Survey;
- Data from the Portable Antiquity Scheme (PAS) accessed through the information held by EHER, with supplementary information accessed via the online database, which records chance finds recovered and reported to them;
- Relevant grey literature reports relating to archaeological investigations within the vicinity;
- Tendring District Council Historic Environment Characterisation Report (Tendring District Council and Essex County Council 2008);
- Tendring Geodiversity Characterisation Report (Tendring District Council and Essex County Council 2009);
- Essex Historic Grazing Marsh Project (Essex County Council 2014);
- Managing the Essex Pleistocene (Essex County Council 2015);
- CITiZAN Data, available online; and
- The Historic Landscape Characterisation for Essex (Essex County Council 2011).

SURVEYS/MONITORING

7.4.7 Geophysical survey has been undertaken over the Onshore ECC and OnSS, in all areas that were suitable for survey and available for access. The amounts to approximately 85% of the Onshore ECC and TCCs and the OnSS area with much of the area not surveyed located towards the landfall area. However, the total geophysical survey undertaken for the project covers a much larger area than the proposed Order Limits as the results of the survey were partially used to inform the refinement of the route (alongside other factors). The results of all of the data collected, are presented in Volume 6, Part 6, Annex 7.2: Geophysical Survey Report and summarised below in Paragraph 7.7.37.

7.4.8 Monitoring of geotechnical boreholes under watching brief at the landfall was undertaken in April-May 2022 and further geotechnical boreholes at engineering pinch points were subject to a watching brief along the Onshore ECC in April-May 2023. The results have been used to inform types of deposits that exist within the proposed Order Limits. The results of the 2022 monitoring are presented in Volume 6, Part 6, Annex 7.4: Archaeological and Geoarchaeological Monitoring of Ground Investigation Works and the results of the 2023 monitoring are presented in Volume 6, Part 6, Annex 7.7. The results of both have been incorporated into the Geoarchaeological Desk-Based Assessment (Volume 6, Part 6, Annex 7.3) and have informed the assessment of effects to geoarchaeological deposits (Paragraph 7.10.2).

7.4.9 A walkover survey of the Onshore ECC and OnSS has been undertaken to inform the assessment, as well as specific receptor visits for the assessment of setting. The majority of the Onshore ECC and parts of the OnSS were accessible for walkover in October 2022. Some of the remaining areas and an additional visit to the foreshore, have been undertaken in Autumn 2023 for the ES. Areas that were not accessible for walkover are shown on Figure 9 within Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment. Observations made during these walkovers are presented in Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment and Volume 6, Part 6, Annex 7.6: GPA3 Exercise and Technical Note (Onshore Project Area).

7.4.10 Walkovers and specific receptor visits were also undertaken within the coastal area for the assessment of effects to heritage assets from the offshore array. Visits were made to the Coastal Asset Groups and other selected assets that were identified as being potential sensitive receptors to the proposed offshore array. Further detail is provided in Volume 6, Part 6, Annex 7.5: GPA3 Exercise and Technical Note (Offshore Array).

7.4.11 Archaeological trial trench evaluation and geoarchaeological test pitting has been undertaken at the OnSS. This was carried out in two Phases; Phase 1 comprised 48 trial trenches and 11 test pits undertaken in May 2023. The results of this phase are presented in Volume 6, Part 6, Annex 7.8. The second phase of archaeological work was undertaken in September-October 2023 and consisted of 76 trenches and 19 test pits. The results of this phase are presented in Volume 6, Part 6, Annex 7.9: Archaeological Evaluation- Phase 2.

ASSESSMENT METHODOLOGY

7.4.12 For the purposes of determining the DCO application, the Infrastructure Planning (Decisions) Regulations 2010 require that decision makers have regard to the desirability of preserving;

- Listed buildings and any features which contribute to their special interest and settings;
- Scheduled monuments and their settings; and
- The character and appearance of conservation areas.

7.4.13 For the purposes of the Infrastructure Planning (Decisions) Regulations 2010, if the assessment determines that where the contribution that setting makes to significance of a heritage asset is not changed and the asset does not lose its significance as a result, both the setting and the asset are considered to be preserved (at least in respect of their heritage interests).

7.4.14 The assessment proceeds from the basis that it is the significance of an asset that is of concern (following NPS and NPPF), and follows the Historic England guidance (Historic England 2017) in considering that setting is important in respect of what it contributes to an asset's significance, and the way in which that significance is able to be understood and appreciated. Significance is the sum of an asset's heritage interests.

ASSESSMENT OF DIRECT EFFECTS

7.4.15 Direct effects to heritage assets result from physical damage or disturbance, which gives rise to a loss of heritage significance. Consequently, it is only those assets which are within the footprint of the proposed development and associated construction activities (such as temporary construction compounds and haul roads) which are potentially subject to direct effects. As archaeological features are not always evident, desk-based assessment and geophysical survey have been undertaken to determine the presence and locations of archaeological heritage assets (where possible) and inform on the potential that unrecorded remains may survive that might be affected by the proposed development.

7.4.16 As the conclusions of the DBA are predictive and probabilistic and the results of the geophysical surveys have not been ground truthed by intrusive investigation across the entirety of the Onshore ECC route, there are some cases where the potential presence of heritage assets or their significance remains difficult to state with confidence. However, significance has been assigned based upon professional judgement, taking into account the previous experience and results of archaeological work undertaken at the OnSS and in the wider area as recorded in the Historic Environment Record. The assessment of potential effects has taken a precautionary approach, assuming a reasonable worst case scenario (that is, any archaeological remains will have some value and, where present, this will likely be damaged or destroyed by construction related activities such as groundworks and earthmoving which could take place anywhere within the proposed Order Limits); design has been undertaken and mitigation proposed as appropriate, with this in mind.

7.4.17 Direct effects on heritage assets, as a result of the onshore elements of VE, would only occur within the proposed Order Limits (although not in areas only used for operational and maintenance accesses). The study area for the assessment of direct effects on the onshore historic environment is considered within the desk-based assessment (Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment) and baseline data was gathered within a 500 m radius of the proposed Order Limits to inform the prediction of likely archaeological remains within the route. This includes areas which are in the intertidal zone between Mean High Water Springs (MHWS) and Mean Low Water Springs. The archaeological potential of these areas is discussed at Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment to provide context for the assessment, but effects on heritage assets below MHWS are assessed in Volume 6, Part 2, Chapter 11: Offshore Archaeology and Cultural Heritage.

ASSESSMENT OF INDIRECT EFFECTS

7.4.18 For the purpose of the assessment within the ES chapter, indirect effects are defined here as those which result in potential change to heritage significance, but do not give rise to physical damage or disturbance to the asset. In this context, these effects will generally arise through change to the settings of heritage assets. Setting is not explicitly defined in either statute or NPS EN-1. However, the NPS EN-1 does make reference to setting and provides a definition (NPS EN-1 2023, paragraph 5.9.3, footnote 228) and goes on to set out how setting should be taken into account. Setting is also defined in the NPPF glossary as *'the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral'* (NPPF 2023, Annex 2 Glossary).

7.4.19 The Historic England guidance (The Setting of Heritage Assets, 2017) follows this definition and sets out guidelines for considering any effects on the significance of heritage assets arising from change to setting. The guidance accords with the NPS and NPPF in recognising that it is effects to significance which are of concern. The guidance specifically states that *'Setting itself is not a heritage asset'* and that '*its importance lies in what it contributes to the significance of the heritage asset or to the ability to appreciate that significance'* (Historic England 2017).

7.4.20 Assessment of setting is primarily associated with designated heritage assets or non-designated heritage assets of equivalent heritage significance (where such assets are identified). The assessment follows steps 1-4 of the following five step sequential process (Step 5 being the responsibilities of the decision makers and the local planning authority) set out in Historic England (2017) guidance;

- **Step 1**: Identify which heritage assets and their settings are affected;
- **Step 2**: Assess the degree to which these settings make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated;
- **Step 3**: Assess the effects of the proposed development, whether beneficial or harmful, on that significance or on the ability to appreciate it;
- **Step 4**: Explore ways to maximise enhancement and avoid or minimise harm; and
- **Step 5**: Make and document the decisions and monitor the outcomes.

7.4.21 In order to better understand the potential effect, a clear statement of the asset's overall significance is required, as well as the contribution that setting makes to that heritage significance. It is the final effect on the overall heritage significance of an asset that is being assessed, not simply the degree to which the contribution to that heritage significance made by setting is changed.

7.5 ASSESSMENT CRITERIA AND ASSIGNMENT OF SIGNIFICANCE

7.5.1 To understand the significance of direct effects, baseline data has been reviewed to

- Identify known or suspected archaeological sites within the proposed Order Limits; and
- Characterise the heritage resource from the Study Area

7.5.2 Comparison of the distribution of the known and potential archaeological features with location and extent of the proposed construction works allows the potential extent and nature of any direct disturbance to be characterised.

7.5.3 The assessment of effects arising from change within settings follows the approach set out by Historic England in the guidance outlined above (The Setting of Heritage Assets, 2017). For the assessment of VE, the potential for loss of heritage significance is most likely to occur as a result of intervisibility or direct views between the heritage asset and the development, where that presence adversely affects one or more of the interests which comprise the heritage significance of that asset. Change to views of an asset from a third viewpoint, even where there is no direct intervisibility between the development and the asset, may also be relevant as there may be non-tangible historic or other associations. However, it is important to consider that simple intervisibility between an asset and the development, or presence in views, is not in and of itself, an adverse effect. There has to be specific change (reduction in) the contribution made by that element of the 'setting', so as to cause a reduction in (harm to) the heritage significance of the asset.

7.5.4 In addition to purely visual considerations (which may or may not make a contribution to the heritage significance of an asset), other effects of the development, such as noise, may also have an effect, although this is normally only relevant in relatively close proximity to the proposed development. These effects are understood in terms of the relationship of the asset with its current setting and may be positive, enhancing the heritage significance of the asset, value-neutral or harmful depending upon the nature of the change, the character of the setting and its contribution to the heritage significance of the asset.

SIGNIFICANCE EVALUATION METHODOLOGY

7.5.5 The assessment of the significance of any effect on a heritage asset is largely a product of the heritage significance of an asset and the magnitude of the effect that may give rise to harm, qualified by professional judgement. An assessment of effects on a heritage asset involves an understanding of the heritage significance of an asset and in the case of an indirect effect, the contribution of the setting to the heritage significance of an asset. The effect being assessed is whether the asset loses significance due to a reduction in the contribution that its setting makes to that significance, as a result of development within that setting. NPS EN-1 (DESNZ 2023) paragraph 5.9.12, sets out that the level of detail should be proportionate to the heritage significance of a heritage asset, and no more than is sufficient to understand the potential impact of the proposal.

7.5.6 Guidance discusses the conservation of the heritage significance of heritage assets, as change as an inevitable process but one that can be managed. Heritage significance is not necessarily dependent upon the preservation of a feature as it can be enhanced through sensitive management. NPS EN-1 (DESNZ 2023), paragraph 5.9.13 encourages the applicant to consider viable uses that sustain the significance of the historic environment, consistent with the conservation of heritage assets.

7.5.7 Rather than just characterising the potential effects of development, any assessment therefore needs to understand the effects on the heritage significance of heritage assets and/or significant places. The heritage significance of the asset is determined by reference to heritage interests as set out in PPG (2019; Paragraph: 006 Reference ID: 18a-006-20190723) and restated in Historic England's 'Statements of Heritage Significance; Analysing Significance in Heritage Assets' (2019; p.16). These are as follows;

- Archaeological Interest; there will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.
- Architectural and Artistic Interest; these are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of a design, construction, craftsmanship, and decoration or buildings and structures of all types. Artistic interest is an interest in other human creative skill, like sculpture.
- Historic Interest; an interest in past lives or events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history, but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.

7.5.8 For the purposes of assessing the significance of effects in EIA terms, heritage significance has also been assigned to one of the five classes, with reference to the heritage interests described above and relying on professional judgement as informed by policy and guidance. The hierarchy given in Table 7.3 reflects the NPS distinction between designated and non-designated heritage assets. The NPS further distinguishes between designated assets of the highest heritage significance (i.e. World Heritage Sites, scheduled monuments, protected wreck sites, Grade I and II* listed buildings and Grade I and II* registered parks and gardens) and other designated assets. This further distinction is relevant to planning policy, but has less influence on the establishment of the significance of an effect in EIA terms (and listed buildings of any grade are subject to the same legal protection in any case).

7.5.9 Effectively, designation of an asset is a recognition of the heritage interests and value inherent within that asset, which are deemed worthy of statutory protection. These assets are therefore typically regarded as more important than non-designated heritage assets, except where provided for in the Environmental Impact Assessment Regulations (The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017) and in the NPS (e.g. where non-scheduled assets which are of demonstrably equivalent importance to a scheduled monument can be afforded the same degree of consideration). The sensitivity of an asset to change (as opposed to simply its accorded level of importance) is discussed within the assessment text provided in Section 0-7.12 below, as appropriate.

7.5.10 The significance of identified heritage assets is defined in Table 7.3, following the definition of heritage significance as set out in NPS EN-1 (DESNZ 2023). The phrase 'heritage significance' is used where appropriate to avoid confusion between the significance of a heritage asset in policy terms and the significance of effect.

Table 7.3: Sensitivity/Importance of Receptor

Heritage Significance	Description/ reason
Very High	World Heritage Sites; which are internationally important Assets of acknowledged international importance Assets that can contribute significantly to acknowledged international research agendas Historic landscapes of international value (designated or not)
High	Scheduled monuments and undesignated assets of Schedulable quality and importance Listed Buildings Archaeological assets that can contribute significantly to acknowledged national research objectives

Heritage Significance	Description/ reason
	Designated and non-designated historic landscapes of high quality and importance and of demonstrable national value (including Grade I and II* registered parks and gardens)
Medium	Designated or undesignated archaeological assets that contribute to regional research objectives Conservation areas Designated and non-designated historic landscapes of special historic interest (including Grade II registered parks and gardens)
Low	Non designated heritage assets, including locally listed buildings and other buildings that are considered to be of local interest Archaeological assets of limited value, but with potential to contribute to local research objectives
Negligible	Assets with very little or no surviving archaeological interest/buildings with little or no value at local or other scale; Landscapes with little or no significant historic interest

7.5.11 In consideration of sensitivity and importance, designation status (and its implicit recognition of the value of heritage interest with an asset deserving of such protection) is a starting point. However, some aspects may be more or less sensitive to the anticipated changes from the proposed development whatever their grading. The categorisation of an asset to a particular level of sensitivity or importance is based in part on designation and in part on professional judgement on the degree to which an asset is sensitive to the type of change expected. The text assessments presented in Section 0- 7.12 take this into account.

7.5.12 Direct effects are qualified by the extent and nature of remains associated with an asset which would be disturbed or lost, and the effect of this loss on the heritage interests (heritage significance) of the asset. In respect of buried archaeological remains with no visible above ground expression, this would normally result in the loss of archaeological interest, but elements of architectural and historic interest can also be affected, depending on the asset.

7.5.13 In this context, the effects of change in the setting of a heritage asset may depend on individual aspects of that setting, and assessments must be, by their nature, specific to the individual assets being considered. Historic England guidance (2017) advises that the following aspects of setting should be considered in addition to any identified key attributes;

- The physical surroundings of the asset, including its relationship with other assets;
- The way the asset is appreciated; and
- The asset's associations and patterns of use.

7.5.14 It should be noted that not all change necessarily detracts from the heritage significance of an asset. In the assessment of effects on the setting of heritage assets, the nature of the effect, i.e. positive, negative or neutral, of development is a subjective matter. Change is usually taken to constitute a negative effect where it will introduce new and different elements to the setting of designated features, either to an imagined contemporary setting or to their existing setting, in such a way that the interests which comprise the heritage significance of that asset (or the ability to appreciate them) are adversely affected, or the ability to appreciate that heritage significance is diminished. However, this change will only be assessed as generating a significant (adverse) effect where it reduces the contribution made by the setting of an asset to such a degree (magnitude) that the overall significance of the asset is diminished or otherwise harmed. The degree to which this overall significance is affected is what is being assessed and is reflected in the final assessed significance score.

7.5.15 Effects on receptors are assigned to one of five classes of magnitude, defined in Table 7.4.

Table 7.4: Impact Magnitude Definitions

Magnitude	Definition
Very High	Total loss or major alteration to a site, building or other feature (e.g. destruction of archaeological feature, demolition of a building). Fundamental change in setting and/or disassociation of an asset from its setting, such as by blocking or severance of key views so as to cause wholesale reduction in the contribution that setting makes to the heritage significance of that asset, and hence a significant loss of the asset's overall heritage significance.
High	Major physical damage to or significant alteration to a site, building or feature. Extensive change (e.g. loss of dominance, intrusion on a key view or sightline) to the setting of a scheduled monument, listed building or other feature registered as nationally important, which may lead to a major reduction in the contribution of that setting to the heritage significance of the heritage asset itself, and hence a loss of overall heritage significance for that asset.
Medium	Damage or alteration to a site, building or other feature. Encroachment on an area considered to have high archaeological potential. Change in setting (e.g. intrusion on designed sightlines and vistas) to monuments/buildings and other features, which may lead to a moderate reduction in the contribution of that setting to the heritage significance of the heritage asset, and hence a reduction in the asset's overall heritage significance.

Magnitude	Definition
Low	Minor damage or alteration to a site, building or other feature. Encroachment on an area where it is considered that a low archaeological potential exists. Minor change in setting, (e.g. above historic skylines or in designed vistas) of monuments, listed buildings, sites and other features, which may lead to a small reduction in the contribution that setting makes to the heritage significance of a heritage asset, with an appreciable loss in the asset's overall heritage significance.
Negligible	No or minimal physical impact. Slight or no change in setting, or one with no or very limited change in the contribution that setting makes to the heritage significance of the asset and no loss of overall heritage significance.

7.5.16 Effects are considered to be significant or not significant in EIA terms according to the matrix in Table 7.5. For this assessment, a moderate or major effect would be considered to be significant in EIA terms, depending on the heritage significance of the asset (above) and the exercise of professional judgement.

7.5.17 In making the final decision on the significance of an effect, consideration is given not only to the importance of the asset in terms of its designation, but also to the sensitivity of an asset to the type of change or impact anticipated, as well as the magnitude of that change. For example, a highly graded listed building may have a high level of importance by virtue of its designation, but may be less susceptible to change in setting (and hence potential reduction in heritage significance) arising from development proposals. This may be due to the asset's form, or that the location or form of its heritage interests are not such that its heritage significance relies on a visual contribution from setting, so that its heritage interests and hence overall heritage significance is not harmed.

7.5.18 Conversely if a heritage asset's heritage significance is entirely derived from a visual contribution from its setting, then a higher level of heritage significance may be accorded to the effect on the asset's heritage significance from the anticipated impact, whatever the level of grading of the asset. The final conclusion of the significance of any given effect is informed by professional judgement and based on consideration of all these factors, as set out in the relevant assessment text as appropriate.

Table 7.5: Matrix to determine effect significance.

			Heritage Significance/Sensitivity			
		Very High	High	Medium	Low	Negligible
Magnitude: Adverse	Very High	Major	Major	Moderate	Minor	Negligible
	High	Major	Major	Moderate	Minor	Negligible
	Medium	Moderate	Moderate	Moderate	Minor	Negligible
	Low	Minor	Minor	Minor	Negligible	Negligible
Neutral	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Beneficial	Low	Minor	Minor	Minor	Negligible	Negligible
	Medium	Moderate	Moderate	Moderate	Minor	Negligible
	High	Major	Major	Moderate	Minor	Negligible

Note: shaded cells are defined as significant with regards to the EIA Regulations 2017[1].

7.5.19 The ES will report effects in line with the EIA regulations in terms of significant effects, however, to equate this effect to NPS EN-1, NPPF and technical guidance which refers to substantial harm and less than substantial harm to heritage significance in weighing the balance of effects against public benefits, the following equivalents should be considered to apply;

- Negligible= No harm to heritage significance;
- Minor negative effect= Less than substantial harm to heritage significance (lower end of the scale);
- Moderate negative effect= Less than substantial harm to heritage significance (upper end of the scale); and
- Major negative effect=Substantial harm.

7.5.20 The use of a scale in consideration of 'less than substantial harm' allows a more nuanced correlation with the levels of significance of effect in EIA terms and permits a greater degree of variance in how 'less than substantial harm' can be expressed.

[1] The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

7.6 UNCERTAINTY AND TECHNICAL DIFFICULTIES ENCOUNTERED

7.6.1 There are two principal areas of uncertainty in this chapter of the ES. The first relates to the nature of the archaeological baseline. The desk-based studies on which this assessment has been based in part, are predictive and do not provide a definitive understanding of as-yet unrecorded archaeological heritage assets that may be affected by the proposed development.

7.6.2 The second area of uncertainty relates to the detail of the proposed development, which retains a degree of flexibility within the Rochdale Envelope approach, which allows for a range of design options that will be finalised in the detailed design phase, post-consent. For the Onshore infrastructure this relates to details surrounding the exact extent of the Onshore ECC within the defined corridor and the type and design of the OnSS.

7.6.3 The nature of the site area means that the character of as-yet unrecorded heritage assets can be predicted with a reasonable degree of confidence, although the condition and distribution of such heritage assets is less well defined. The implications of this uncertainty are discussed in more detail in the assessment of direct effects (Section 0).

7.6.4 Additionally, some of the assets considered within this assessment have been included due to location within the ZTV, as prepared for and used by the LVIA and SLVIA. It is noted that the ZTV is a bare-earth model, and does not take into account any screening afforded by vegetation and buildings which may prevent or reduce actual visibility. The ZTV assumes visibility at 2 m above ground level and is based on a 5 m data grid digital terrain model. This provides a rather coarse grain and the actual degree of visibility of the development may be different at any given location than predicted. Finally, the ZTV does not reflect the degree to which visibility can decrease with distance; the nature of what is visible at 3 km will differ considerably from what is visible at 10 km, although both are indicated by the ZTV to have the same level of visibility. Further details on the ZTV can be found in Volume 6, Part 2, Chapter 10: Seascape, Landscape and Visual Impact Assessment and Volume 6, Part 3, Chapter 2: Landscape and Visual Impact Assessment of the ES.

7.7 EXISTING ENVIRONMENT

THE ONSHORE ECC AND ONSS

SUMMARY OF THE GEOARCHAEOLOGICAL AND ARCHAEOLOGICAL BASELINE

7.7.1 A summary of the geoarchaeological and archaeological baseline is provided below. Full details of archaeological discoveries within the study area and further detail on the geoarchaeological background are provided within Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment and Volume 6, Part 6, Annex 7.3: Geoarchaeological Desk-Based Assessment.

7.7.2 Quaternary superficial deposits are present within the proposed Order Limits and include deposits of both Pleistocene and Holocene date. Pleistocene deposits are likely to be widely present across the proposed Order Limits, including Kesgrave Sands and Gravels and Brickearth, with Alluvium of Holocene date, and potentially Pleistocene fluvial deposits associated with the Holland Brook, located at the southern end of the proposed Order Limits. Pleistocene and/or Holocene deposits of Head/Colluvium, though unmapped, may be present on valley slopes or at the base of valleys in various parts of the proposed Order Limits.

7.7.3 The Kesgrave Sands and Gravels underlying much of the proposed Order Limits are likely to comprise deposits of the pre-Anglian Colchester Formation, equivalent to the Cooks Green/Wivenhoe and Ardleigh Gravels. Towards the south of the proposed Order Limits deposits of the Anglian Holland Gravel, and unmapped post-Anglian fluvial deposits, may also be present, along with post-Anglian fluvial deposits of the Holland Brook. On the basis of Palaeolithic finds within the study area, these deposits are of high archaeological and geoarchaeological potential.

7.7.4 The sands and gravels in the area of the proposed Order Limits are overlain by a widespread unit of Pleistocene Brickearth; these deposits are undated, but may include deposits of Late Devensian or older Pleistocene date. They are likely to be originally aeolian in origin, but may be substantially reworked by various processes. The geoarchaeological and archaeological potential of these deposits is unknown.

7.7.5 Towards the south eastern end of the proposed Order Limits in the area of Holland Haven Marshes, and in the valley of the Holland Brook and its tributaries, Holocene Alluvium is likely to be encountered.

7.7.6 Three geotechnical boreholes were monitored as part of a watching brief in 2022 within the landfall zone. These recorded alluvial deposits interbedded with peats within all three of the boreholes at a depth of between 1.2-2 m below ground level (bgl) and between 4.5 m and 7.2 m thick. In BH203 the peat and alluvial deposits overlaid Kesgrave sands and gravels between 9.2-11.5 m bgl. The other two boreholes did not record the Kesgrave sands and gravels. The full results of the watching brief are presented in Volume 6, Part 6, Annex 7.4: Archaeological and Geoarchaeological Monitoring of Ground Investigation works.

7.7.7 A further seven geotechnical boreholes were monitored as part of a watching brief at Swan Lane, Little Clacton Road and either side of the section of the Great Eastern Main Line Spur between Thorpe le Soken and Kirby Cross Kesgrave sands and gravels were encountered in four of the boreholes at depths between 1.2 m and 2 m bgl directly overlying London Clay bedrock. These deposits have the potential to contain Lower Palaeolithic archaeology and organic and other fossiliferous sediments with geoarchaeological potential. Brickearth was discovered in five of the boreholes. The age of these deposits is uncertain but may include deposits formed in various stages of the Pleistocene. Dependent upon the age of the brickearth deposits, this could have potential for Lower or Middle Palaeolithic archaeology and fossiliferous sediments of geoarchaeological potential.

LOWER PALAEOLITHIC

7.7.8 The Kesgrave Sands and Gravels in the proposed Order Limits have undergone little research and their distribution and stratigraphy is uncertain. Nevertheless, they have been shown to contain Lower Palaeolithic archaeology in the study area that predates the diversion of the Thames further to the south during the Anglian glaciation.

7.7.9 This is the earliest archaeology from the region and some of the earliest archaeology from Britain. Units within the Kesgrave Sands and Gravels contain organic and other fossiliferous sediments, and therefore also have significant geoarchaeological potential. Consequently, these deposits have potential to contain Palaeolithic archaeological and geoarchaeological evidence that will contribute to national and regional research themes and priorities (EH 2008; EERRF 2021).

7.7.10 Potentially the earliest Lower Palaeolithic artefact from the study area is a small broken handaxe from Badley Hall, Great Bromley. Although this artefact does not have a recorded context, its condition has been assessed as rolled and stained (Wymer 1985), indicating that it originates from Pleistocene fluvial deposits.

7.7.11 The most significant collection of Lower Palaeolithic archaeology from the study areas is from Daking's Pit, Weeley. Palaeolithic artefacts were first collected from this site, a disused gravel pit, by Warren in the 1930s (Warren 1933). Most are slightly fluvially abraded, though one handaxe is noted as in nearly mint condition.

MESOLITHIC

7.7.12 In the Tendring area generally, evidence from the Mesolithic period can largely be characterised by significant assemblages of microlith stone tools, particularly around the coast at Walton-on-the-Naze, which attest to the presence of transient groups relying on wild game and fishing for subsistence. Within the study area records of Mesolithic finds include one tranchet axe and an adze. In the wider area other tranchet axes, maceheads and a perforated stone objects have also been found.

7.7.13 The sea levels began to rise during this period due to glacial melt and by the Mesolithic period there was probably a tidal estuary within the cable landfall search area, which occupied the area of low, flat, marshy land in the vicinity of the current Holland Brook (former Holland River). The estuary was known as the Gunfleet estuary from the Medieval period onwards. The estuary extended broadly along the line of the Holland Brook and surrounding marshlands and narrowed as it stretched northwest inland. It probably extended well beyond the present location of Fan bridge on the road between Great Holland Common and Cook's Green (Little Clacton) and may have been tidal as far as Weeley and navigable to smaller boats up to Thorpe-le-Soken further north.

NEOLITHIC

7.7.14 Neolithic activity is well attested across the wider Tendring District and is evidenced by cropmarks of a monumental causewayed enclosure at St Osyth and a ring ditch at Brightlingsea, which together have yielded one of the largest collections of early Neolithic ceramics in the East of England. Evidence suggests that during this period the population begins to move to a more settled agricultural existence.

7.7.15 Within the study area, Neolithic evidence comprises a findspot of three axe heads characteristic of this period found to the south of Lawford and south of Great Holland. The discovery of the finds indicates at least, a presence in the area during this period.

BRONZE AGE

7.7.16 Evidence for the Bronze Age in the wider Tendring area can be characterised by Beaker pottery, barrows and cremation cemeteries. A locally distinctive form of pottery and funerary tradition has been recovered from cremation cemeteries at Ardleigh, Brightlingsea, Lodge Farm and Little Bromley (all outside the study area), with cremations being placed between barrows (evident as ring ditches) in large straight sided elaborately decorated bucket urns. Bronze Age burials have also been found eroding from modern cliff faces north of Walton, which would have still been a distance from the coastline during the Bronze Age.

7.7.17 A concentration of potential Bronze Age features has been identified around Carrington's Farm and covers an area which extends from the south of the proposed Order Limits to the 500 m study area boundary comprising two possible ring ditches both measuring 11 m in diameter. The latter ring ditch is situated within a complex series of undated cropmarks (likely field boundaries, pit and trackway).

7.7.18 Finds recovered from within the proposed Order Limits include finds of middle to late Bronze Age date while a Middle Bronze Age hoard and further Bronze Age axe heads have been recovered from within the study area.

IRON AGE

7.7.19 Evidence for Iron Age activity in the wider area is characterised by dispersed domestic and agricultural settlements, field systems, cremation burials and red hills (salt production). Evidence from sites such as St Osyth (over 5 km to the west of the study area) suggest arable and pastoral farming were practiced, with the lower lying salt marshes being used for grazing.

7.7.20 The majority of the recorded Iron Age evidence within the study area consists of artefact finds recorded by the Portable Antiquities Scheme. There is a particular concentration to the south of Little Bentley, which is a common theme across the periods. This area has been subject to metal detecting, where finds have been properly recorded through the Portable Antiquities Scheme and subsequently added to the HER. There is a concentration of finds from the Iron Age through to the post-medieval, suggesting this could be an area of particular sensitivity, consistent with multiperiod settlement and/or activity.

ROMANO-BRITISH

7.7.21 Evidence from the Romano-British period in the wider area suggests a dispersed settlement pattern during this period, with an associated agricultural landscape with localised industries. The Roman town at Colchester (7 km west of the northern extent of the study area) would also have heavily influenced land use, settlement pattern and economy in the area. A number of villa sites have been identified at St Osyth, Little Oakley and Dovercourt.

7.7.22 Various Roman roads are recorded within the study area, with a particular concentration at the northern extent of the study area, which is reflective of the influence of the Roman town at Colchester. Sections of the Roman road connecting Colchester to Manningtree cross this area and have been identified partly by aerial photography and extant roads with probable Roman (or earlier) origins, such as Bromley Road. Two other Roman roads are recorded in this area north of Little Bromley. There are two records of undated cropmarks within the vicinity of these roads, both of which also include possible sections of Roman road.

7.7.23 Evidence of likely roadside settlement is recorded around Grange Road where two roman roads intersect. This is represented by a very high concentration of cropmark features indicative of settlement including a double-ditched rectangular enclosure with entrances, a curvilinear enclosure, the roads themselves and various linear features.

ANGLO-SAXON

7.7.24 Evidence from the Anglo-Saxon period is generally sparse in the wider area, suggesting either continued occupation or reoccupation of previously abandoned villas and farmsteads. One example being St Osyth, the name of which derives from the dedication of a minster church to Osyth, daughter of a Saxon King. Evidence for Middle Saxon domestic settlement and activity have been recovered from the Clacton area while Later Viking evidence is rare in Essex as a whole, but place name evidence such as Kirkby-le-Soken and Thorpe-le-Soken, are Danish in origin suggesting at least a general presence in the area.

7.7.25 The majority of early medieval HER records within the study area are findspots and include items such as horse tacks, coins, a sword and a brooch. The finds are fairly widely distributed across the study area with a loose concentration between Great Bromley and Little Bromley.

MEDIEVAL

7.7.26 Settlement patterns and activities in the wider area remained dispersed during the Medieval period with villages (centred around churches and greens), hamlets, hall complexes and farmsteads providing settlement foci in an otherwise rural and agricultural landscape. These dispersed settlements were linked across the intervening agricultural land and commons by an extensive network of lanes connecting into the wider road network and roads to larger central markets.

7.7.27 Moated sites are a common small-scale settlement type in Essex, but less so in Tendring. The nearest Medieval moated hall is recorded at Gutteridge Hall in Weeley, over 3 km to the west of the study area. A possible moat was recorded within the proposed Order Limits amongst other undated cropmarks east of Hannam Hall. Medieval activity is well attested at St Osyth and Great Bentley, where the remains of a windmill were identified and represents another relatively characteristic structure of Medieval Essex. No medieval mills are recorded within the HER data from within the study area, though two Post Medieval mills are recorded.

7.7.28 The study area is largely located inland, so there are minimal records relating to coastal trade, though the few sites recorded would have fed into the wider economy during this period. There are presumed landing places recorded along the line of the former Holland River close to the proposed Order Limits. They likely represent lanes that linked the Gunfleet estuary to the farms and villages on the higher land, allowing crops and other local produce to be loaded easily onto boats and carried along the river for trade in the wider area and into London. Remote landing places could also be used to avoid customs control and the isolated marshes at Holland earned a reputation for smuggling which carried on until the 17th century after the estuary had been reclaimed. Likewise, some of the quays along Hamford Water earned a similar reputation.

POST-MEDIEVAL

7.7.29 Coastal trade continued to grow in importance during the post-medieval period. The port at Manningtree 2 km north of the proposed Order Limits thrived throughout the period largely due to its role in the shipping and transport of the area's agricultural produce and its growing role in the malting industry. Previously, the brewing of ale and beer had been predominantly on a small, domestic scale. The post-medieval and modern periods saw the gradual growth of the brewing industry on an industrial scale which generated a thriving malting industry in this part of the county. Brightlingsea continued in existence as a trading port and smaller wharves existed at Beaumont-cum-Moze (Beaumont Quay), St Osyth, Manningtree and elsewhere along the coast.

7.7.30 Two postmedieval windmills are recorded within the study area representing characteristic features of the Essex landscape during this period, continuing on from the medieval period. Great Holland Hill mill is a former smock mill adjacent to the proposed Order Limits from at least the post-medieval period to 1985 when it was lost to fire. A mill is shown west of Great Holland on the Chapman and Andre map of 1777 and is the earliest depiction of a mill in this location. The base of the mill was the only part of the mill to survive the fire and is still extant. The mill house is Grade II listed and of 19th century date.

MODERN

7.7.31 During the modern period the aggregates industry grew exponentially in this area and has resulted in significant areas of mineral extraction across the Tendring peninsula since the Second World War (WWII). The nearest occurrence of extraction near the study area is at Ardleigh.

7.7.32 Coastal defences continued to be built and decommissioned within the study area during the modern period with the advents of the First and Second World Wars (WWI and WWII). Several WWII pillboxes are located with the southern part of the Site along the foreshore in varying condition. Several former WWII defences also existed within the study area which have since been removed.

7.7.33 An advanced night landing ground is recorded to the south of Beaumont-cum-Moze, close to the proposed Order Limits. The 43-acre site served the 39 Squadron Royal Flying Corps who were operating anti-Zeppelin patrols from April 1916 as part of WWI air defences. By August 1916 the site had been returned to agricultural use. In view of the short duration of this landing ground's use, it is very unlikely that any evidence of the airfield survives on or below ground.

UNDATED

7.7.34 The EHER records an extensive series of cropmarks both within the proposed Order Limits and study area, which remain undated. The cropmarks, which also feature as part of the National Mapping Programme (NMP) dataset, generally consist of linear features, ditches, field boundaries, enclosures, and ring ditches.

7.7.35 Examples include a large cropmark area to the south and west of Little Bromley. The cropmarks consist of mainly linear features being part of field systems or trackways, in addition to many ring ditches and several enclosures, and a henge which could be of Neolithic or Bronze Age date. An application has been made by Historic England to Schedule this henge due to it being of high heritage significance.

7.7.36 Aerial photographs and LiDAR survey data has been assessed for the proposed Order Limits and potential archaeological features have been mapped and described within Appendix A, Volume 5, Annex 7.1: Archaeological Desk-Based Assessment. Each area has been given a reference number (e.g. APS_09) within Appendix A which has been used within the assessment to these potential assets in Section 0 and shown on Figures 7.10-7.14.

GEOPHYSICAL SURVEY RESULTS

7.7.37 Geophysical Survey has been completed over 85% of the Onshore ECC and the TCCs as well as the entirety of the OnSS area. The remaining 15% comprises areas which were unsuitable for survey (such as roads, hedgerows, watercourses, woodland) or areas where access was restricted by the landowner. However, the data collected for the project covers a much larger area that than the proposed Order Limits as the survey was used to inform the development of the proposed Order Limits (along with other factors). The results of all of the data collected are provided in Volume 6, Part 6, Annex 7.2: Onshore Geophysical Survey. The results of the areas surveyed have been summarised as they appear from east to west.

7.7.38 Area 30 is located to the north of the landfall area and lies outside of the proposed Order Limits. Four sections of linear features of possible archaeological origin were detected within this area as well as a possible pit.

7.7.39 Results from Holland Haven North detected a ring ditch within the northern part of the survey area thought to be of archaeological origin and two possible parallel ditches; these have both now been excluded from the proposed Order Limits A possible embankment represented by a ditch and bank feature could be part of a water management system associated with the Gunfleet Estuary which lies within the proposed Order Limits.

7.7.40 Results from Little Clacton Road did not identify any anomalies that could confidently be interpreted as archaeology, although several areas of possible archaeology have been identified including a possible roundbarrow with associated features and a possible medieval co-axial field system; these possible features have now been excluded from the proposed Order Limits. A large possible enclosure or past channel relating to the Holland Brook was identified in the north western part of the survey area and lies within the proposed Order Limits.

7.7.41 Survey at Kirby Cross West revealed several features of possible archaeological origin. A possible rectilinear enclosure with internal divisions was identified north of the railway line west of Pork Lane. A possible penannular anomaly was identified located to the south of the railway line, perhaps representing prehistoric activity.

7.7.42 Results from Area 20 revealed a linear feature close to the B1034 which may be a former field boundary not visible on historic mapping. Further north a ditch-like feature with a small rectangular enclosure and area of increased magnetic response was identified. The area of increased magnetic response may relate to an area of extraction or a backfilled pond. Anomalies relating to field boundaries identifiable on historic mapping were identified within Area 20.

7.7.43 Survey within Area 18 identified a circular anomaly. The anomaly is 13m in diameter and 1.3m wide and may be a possible roundhouse or barrow. Two field boundaries which could be identified on historic ordnance survey mapping were also detected within Area 20.

7.7.44 Areas 15 and 17 did not reveal any features of possible or probable archaeological origin. More recent features such as field boundaries shown on historic maps and an area of increased magnetic response relating to modern agricultural activity were identified.

7.7.45 Survey undertaken East of Tendring identified a possible circular ring ditch anomaly with a central feature. This could be prehistoric funerary activity; a barrow with a central burial. This has now been excluded from the proposed Order Limits. In the southern part of the area east of Tendring, a linear anomaly has been found likely to be a ditch or field boundary.

7.7.46 In the southern part of Area 12 a section of a linear feature has been identified probably representing a ditch or field boundary. More recent field boundaries shown on historic mapping and an area of increased magnetic response relating to a former pond were also identified.

7.7.47 Survey undertaken at Tendring Green North identified a possible ring ditch represented by a semi-circular enclosure (now excluded from the proposed Order Limits) and a number of linear anomalies which could be ditches relating to an earlier field layout (not present on historic mapping). Later field boundaries (shown on historic maps) and areas of increased magnetic response were also identified.

7.7.48 Area 10 revealed possible archaeology in the form of a semi-circular feature and part of a probable rectilinear enclosure. Other former field boundaries were also identified and some areas of increased magnetic response likely to be associated with a former building and a pond, both shown on historic mapping and modern agricultural practices.

7.7.49 Survey results from Area 9 did not reveal any anomalies of possible or probable archaeology. A few areas of increased magnetic response probably relating to modern agricultural practices were identified as well as former field boundaries shown on historic mapping.

7.7.50 Within Area 5 a rectilinear enclosure with internal divisions and internal circular pit-like features have been identified which could indicate settlement activity or animal husbandry. Only the northern extent of the enclosure now lies within the proposed Order Limits Similarly, a further rectilinear anomaly with possible kiln has been identified to the north west and could be further evidence of activities of this kind within the area. Only the southern extent of this enclosure now lies within the proposed Order Limits. A number of former field boundaries identified as linear features can be identified on first edition Ordnance Survey mapping and similarly areas of increased magnetic response in the southern part of Area 5 are likely to relate to ponds and a former farmstead which are shown on the historic maps (now excluded from the proposed Order Limits).

7.7.51 The survey completed within Area 7 now lies outside of the proposed Order Limits. Only a single linear anomaly of possible archaeological origin was found within this area, as well as two field boundaries identifiable on the historic maps.

7.7.52 Survey undertaken within Area 4 revealed a rectilinear enclosure with a possible associated kiln which could be evidence for industrial activity in the north western corner of Area 4 (now excluded from the proposed Order Limits). Several linear anomalies have been detected across the area which could represent former field systems. In addition, a number of penannular anomalies and discrete circular anomalies have been identified further west within Area 4 which could represent ring ditches and evidence for settlement activity.

7.7.53 Features of archaeological origin detected within the Little Bromley survey area within the OnSS include a Roman Road in the northern part of the survey area. In the southern part of the survey area there is evidence of an enclosure and a possible field system (these have now been excluded from the proposed Order Limits)

ARCHAEOLOGICAL TRIAL TRENCHING AND PALAEOLITHIC TEST PIT RESULTS

7.7.54 The proposals within the OnSS area are less flexible for adjustments to the siting/micrositing of the proposals, than for example, the Onshore ECC. As such, it was proposed to undertake trial trenching across the whole area north of Ardleigh Road, particularly as the geophysical survey had detected the route of a possible Roman road (previously identified as a cropmark). Given the need to work with landowners to minimise disruption to existing farming operations, the evaluation was undertaken in two phases.

7.7.55 The Phase 1 archaeological trial trenching was undertaken in the north eastern part of the OnSS Area. The majority of the archaeological features were linear features associated with multiple phases of land management, some of which correspond with those on historic mapping. In addition, a later prehistoric ditch was found in the north eastern corner of the Site. The presumed route of a Roman road had been identified from the HER and geophysical survey. The ditches were found during the evaluation but no dating material was recovered and no metalled surface was identified between the ditches.

7.7.56 Palaeolithic test pits were excavated at the end of 11 of the trenches. This found a consistent sequence of deposits across the Site. The Pleistocene deposits comprised fluvial sands and gravels, the surface of which had been incised by hollows and gullies which were infilled with basal sands and slope deposits. These sediments were sealed by the Pleistocene brickearth. The fluvial sands and gravels belong to the Ardleigh gravels of the Kesgrave Sands and Gravels of the River Thames.

7.7.57 The Phase 2 archaeological trial trenching was undertaken in the southern and western portion of the OnSS Area and comprised the excavation of 76 trenches. This found a total of 21 archaeological features across 19 of the trenches. These mainly consisted of linear features associated with land management/field boundaries some of which corresponded with those shown on the 1898 Ordnance Survey map. A small number of the features were dated to the post-medieval to modern period although most did not contain any datable material so have remained undated. Three pits were also investigated, two of which may have been waste pits but all are of unknown date. Full results of the trial trench evaluation are presented in Volume 6, Part 6, Annex 7.9 Archaeological Trial Trench and Palaeolithic Test Pit Evaluation-Phase 2.

7.7.58 Another 19 Palaeolithic test pits were excavated within the Phase 2 OnSS area which found that the earliest Pleistocene deposits within the evaluation area belong to the Ardleigh Gravel of the Kesgrave Sands and Gravels of the River Thames. These deposits typically comprised high energy fluvial deposits likely deposited in a braided river. No artefacts were recovered from these deposits and the palaeoenvironmental potential is assessed as generally low with the exception of the finer grained sand deposits. The Ardleigh Gravel was overlain by Pleistocene slope deposits comprising head-gravel and head-brickearth and the archaeological and geoarchaeological potential of these deposits is generally low. A gully incised into the top of the Ardleigh Gravel was filled with a basal sand deposit overlying head-gravel, and although no archaeology was recovered from this deposit, it has not previously been identified in the area and is poorly understood and undated.

DESIGNATED HERITAGE ASSETS

ONSHORE STUDY AREA

7.7.59 The 500 m and 2 km study areas surrounding the proposed Order Limits and the operational OnSS area contain the following designated heritage assets;

- Three Grade II* listed buildings;
- 54 Grade II listed buildings;
- Three scheduled monuments; and
- Three conservation areas.

7.7.60 In addition, a single undesignated heritage asset was also considered. The cropmark of a henge has been put forward by Historic England to become a scheduled monument. As this asset is considered to be of equivalent heritage significance to a scheduled monument and it may become scheduled post application, this has been considered as part of this assessment and will be treated as if scheduled (Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Onshore Project Area).

7.7.61 Within the extended buffer around the operational OnSS between 2 km to 5 km, the following highly graded designated heritage assets have been identified;

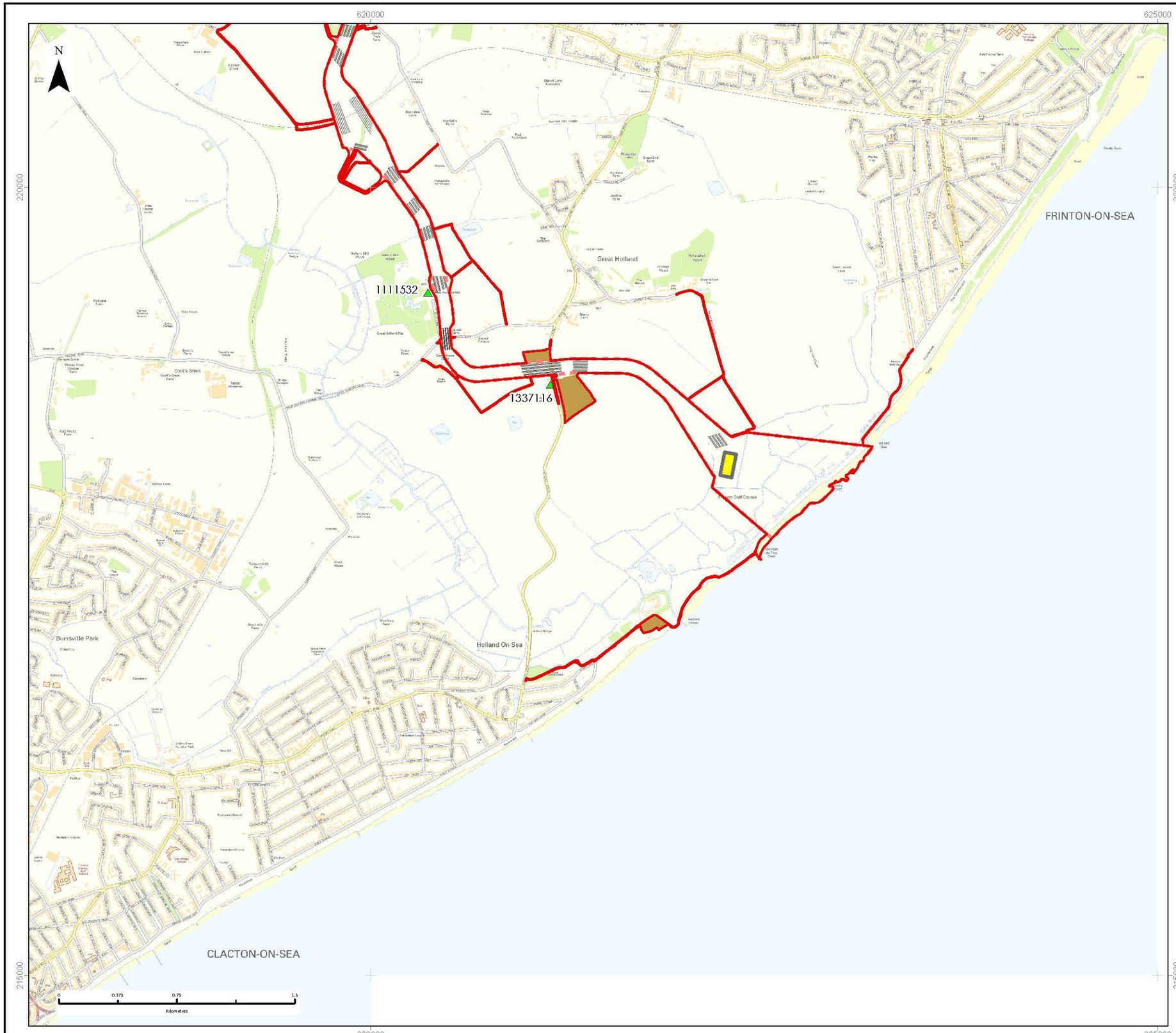
- 13 Grade I listed buildings;
- 20 Grade II* listed buildings; and
- Five scheduled monuments.

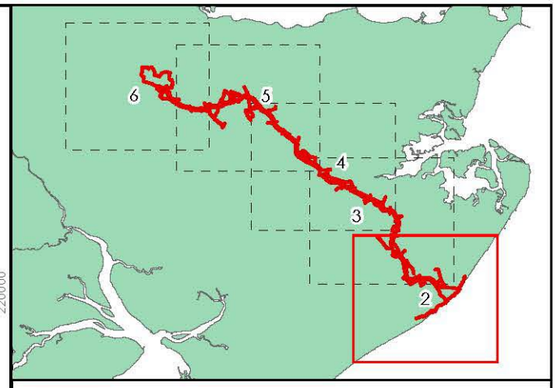
7.7.62 Following the initial assessment presented within Volume 6, Part 6, Annex 7.6: GPA3 Exercise and Technical Note (Onshore Project Area), the following assets have been scoped into detailed assessment within this ES chapter for the assessment of effects arising from the Onshore ECC and OnSS;

- Jennings Farmhouse, Grade II listed building (1111459);
- Great Holland Mill House, Grade II listed building (1111532);
- Bounds Farmhouse, Grade II listed building (1147743);
- Hempstall's Farmhouse, Grade II listed building (1240504);
- Abbotts Hall, Grade II listed building (1261150);
- Ash House, Grade II listed building (1337154)
- Great Holland Lodge, Grade II listed building (1337116); and
- Church of St Mary, Grade II* listed building (1337175).

7.7.63 Due to comments raised at during consultation with the statutory consultees, assessment has also been provided for the Scheduled Monument, cropmark site south of Ardleigh (1002146) and non-designated Little Bromley Henge. All assets considered are shown on Figures 7.2-7.6.

7.7.64 Within the assessment presented at PEIR, Braham Hall (Grade II listed building; 1337155) was also included for assessment within the PEIR chapter due to possible effects arising from the PEIR Phase Substation Search Area SSA East, which was proposed 250 m from the asset. As this option has now been dropped, the asset lies 1.8 km from the proposed OnSS and 800 m from the Onshore ECC. As no likely significant effects are expected to arise this has been de-scoped from the ES chapter; the assessment of effects to the asset within Volume 6, Part 6, Annex 7.6 has been retained and updated.





LEGEND

- Proposed Order Limits
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
- Grade II Listed Building

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Selected Designated Heritage Assets included within ES for Onshore ECC and OnSS

VER	DATE	REMARKS	Drawn	Checked
1	11/03/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.2

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
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FIVE ESTUARIES OFFSHORE WIND FARM

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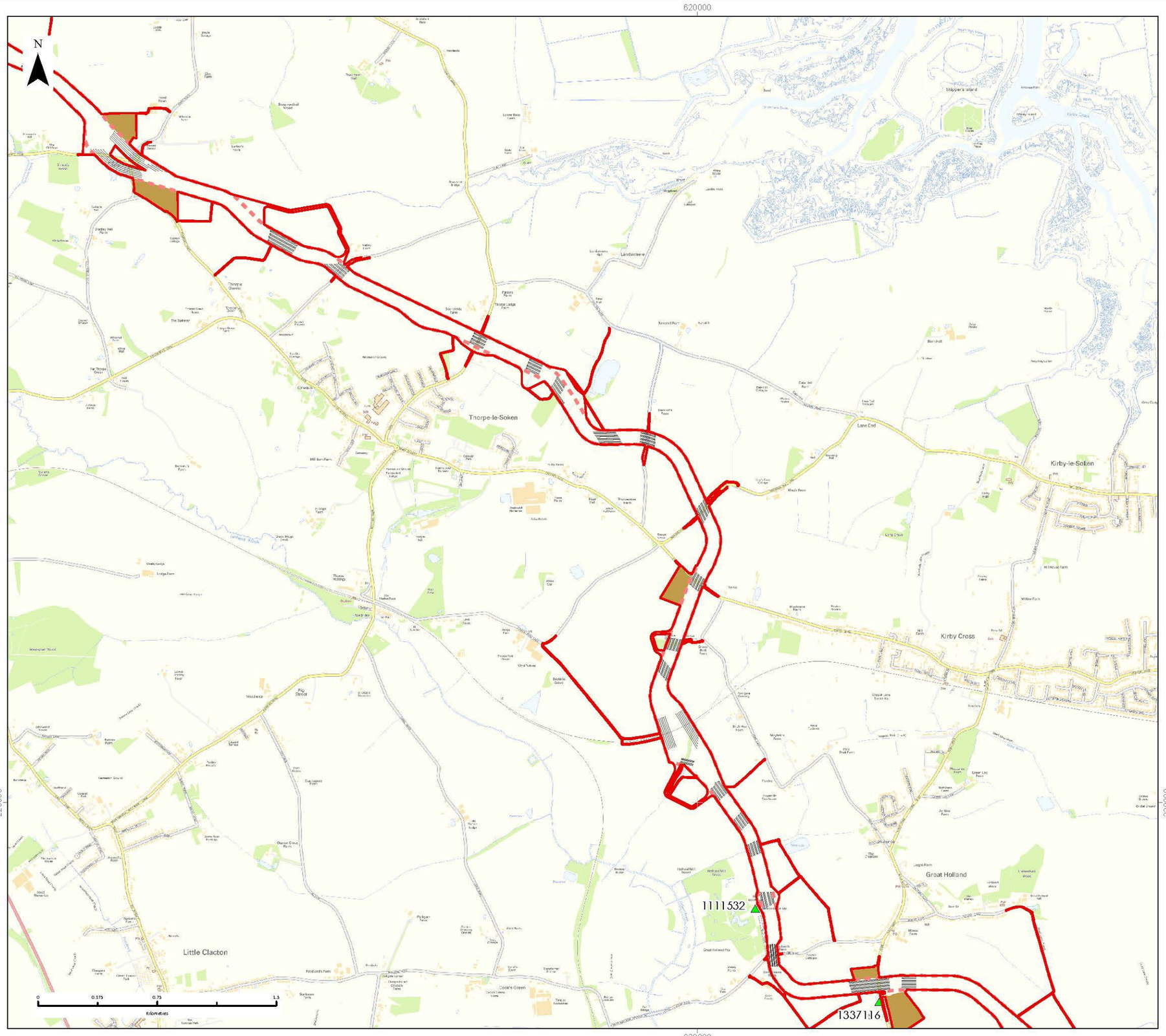

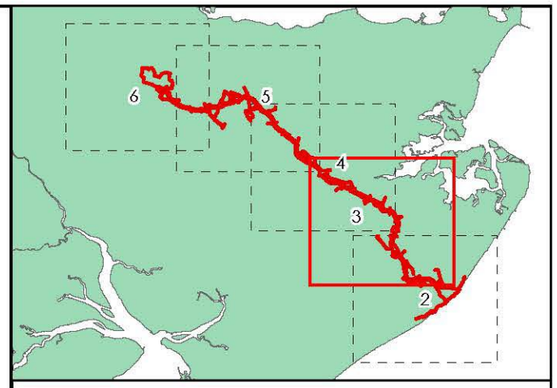

LEGEND

- Proposed Order Limits
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
- Grade II Listed Building

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Selected Designated Heritage Assets included within ES for Onshore ECC and OnSS

VER	DATE	REMARKS	Drawn	Checked
1	11/03/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.3

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
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FIVE ESTUARIES OFFSHORE WIND FARM

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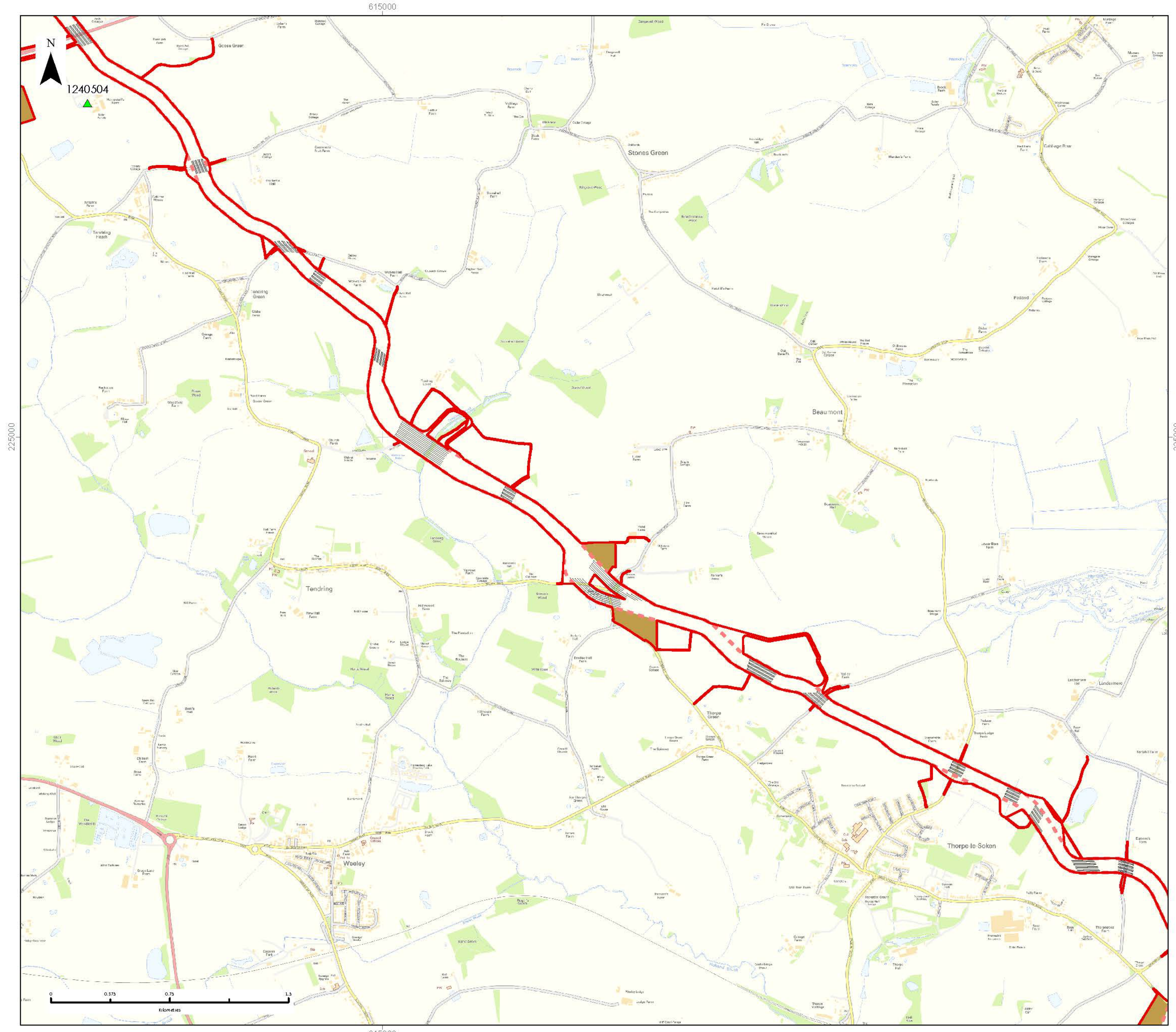

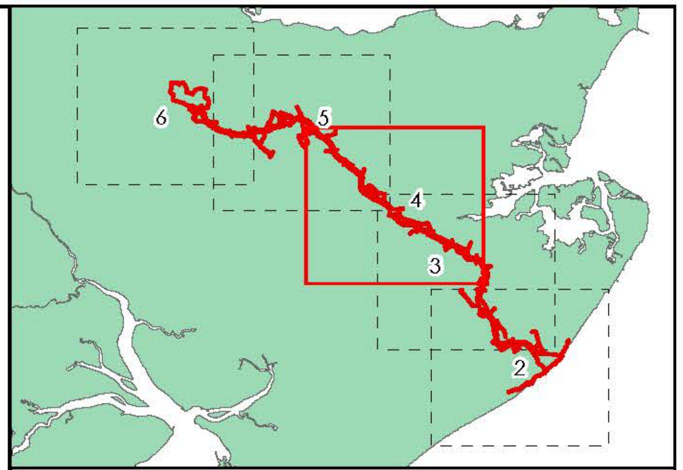

LEGEND

- Proposed Order Limits
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
- Grade II Listed Building

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Selected Designated Heritage Assets included within ES for Onshore ECC and OnSS

VER	DATE	REMARKS	Drawn	Checked
1	11/03/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.4

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FIVE ESTUARIES OFFSHORE WIND FARM

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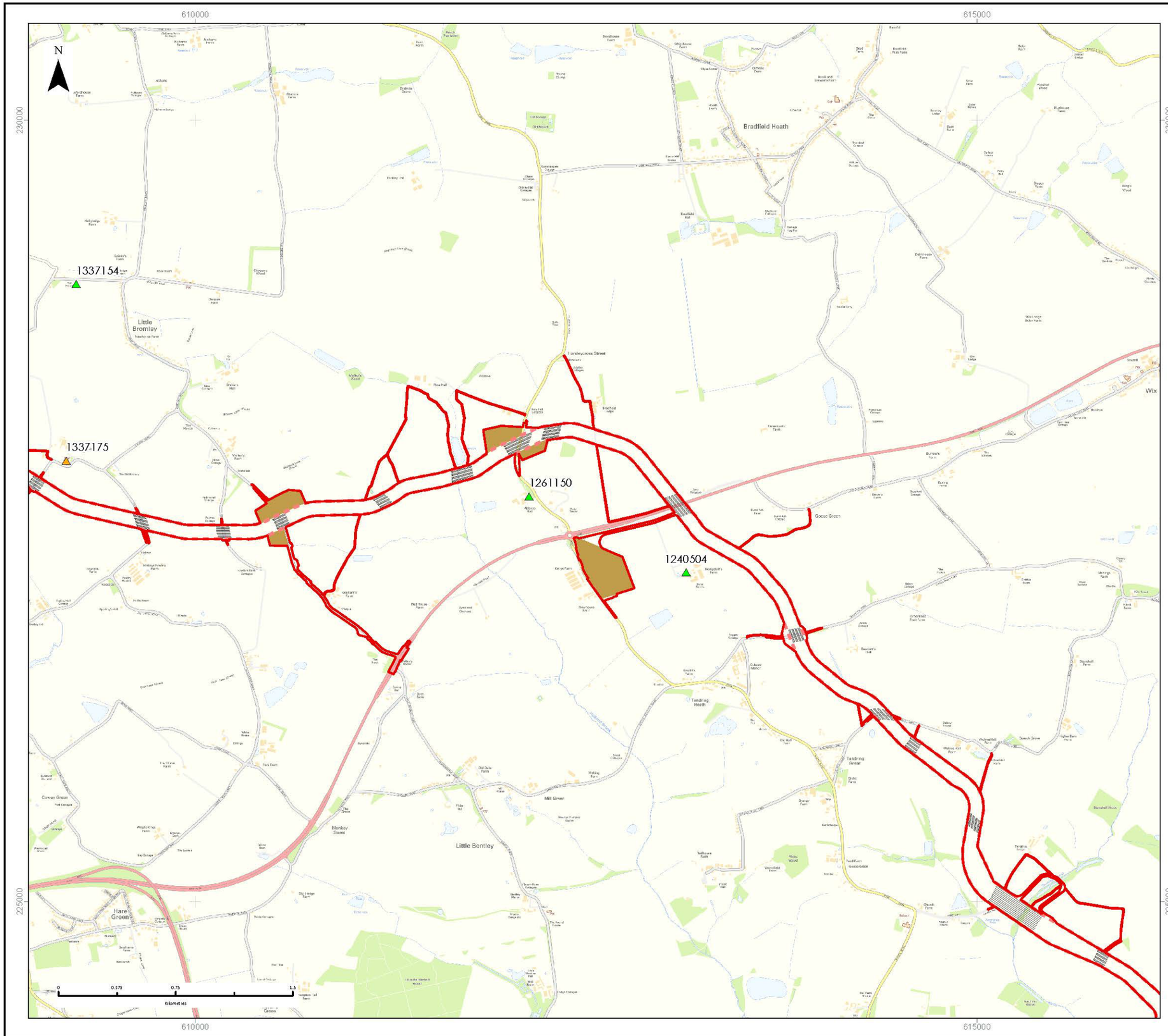

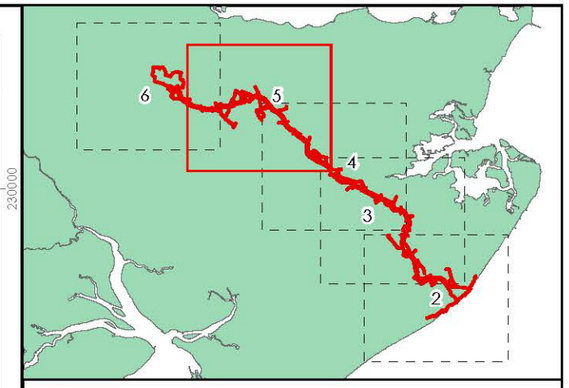

LEGEND

- Proposed Order Limits
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
- Grade II* Listed Building
- Grade II Listed Building

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Selected Designated Heritage Assets included within ES for Onshore ECC and OnSS

VER	DATE	REMARKS	Drawn	Checked
1	11/03/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
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FIVE ESTUARIES OFFSHORE WIND FARM

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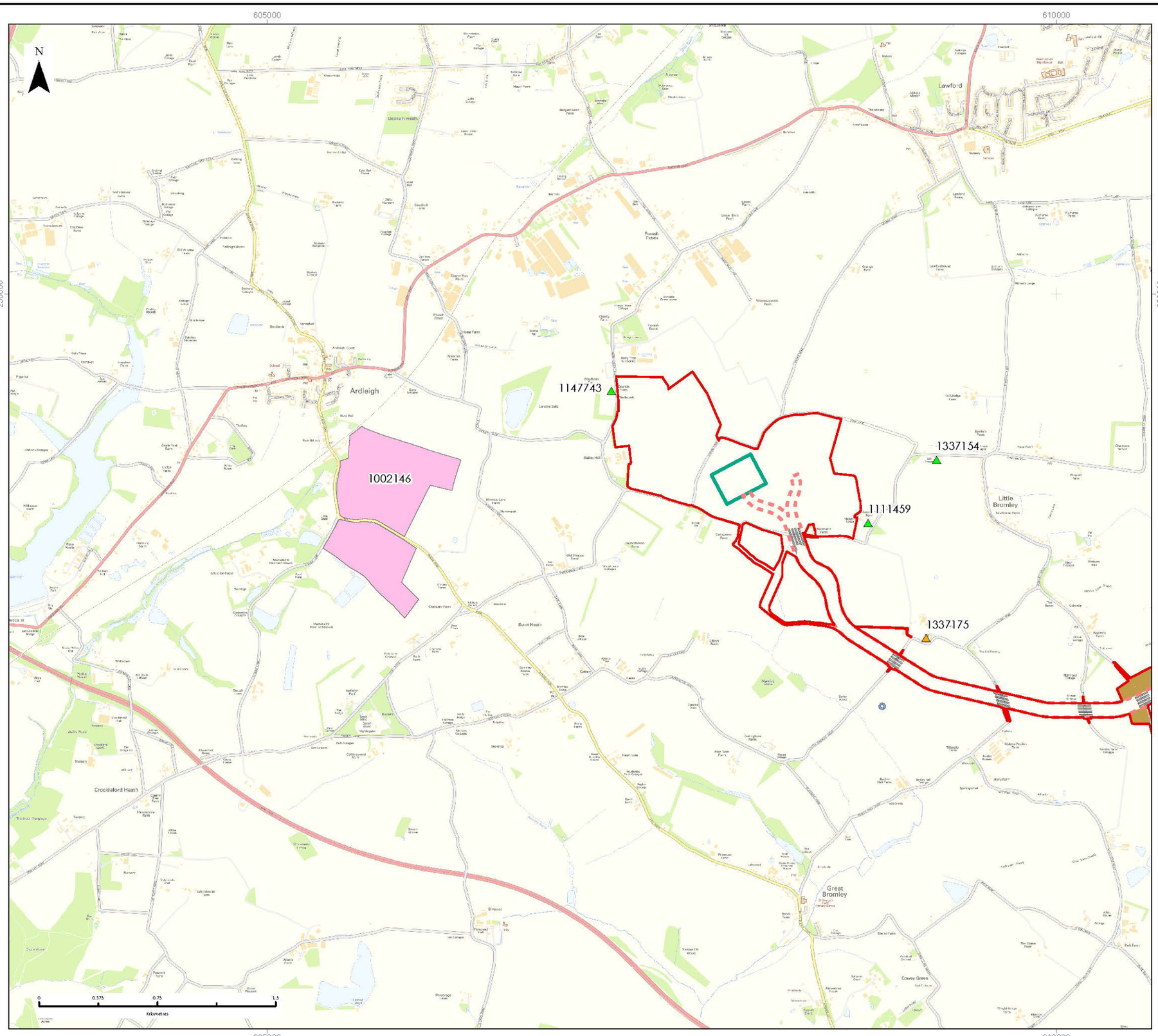

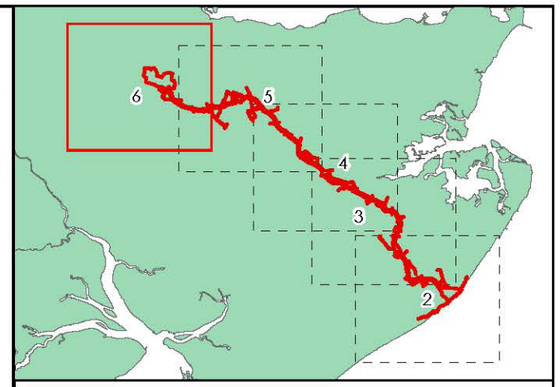

LEGEND

- Proposed Order Limits
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
- Scheduled Monuments
- Grade II* Listed Building
- Grade II Listed Building
- Little Bromley Henge

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Selected Designated Heritage Assets included within ES for Onshore ECC and OnSS

VER	DATE	REMARKS	Drawn	Checked
1	11/03/2024	For Issue	TP	MK

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Figure 7.6

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FIVE ESTUARIES OFFSHORE WIND FARM

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COASTAL STUDY AREA

7.7.65 A very large number of assets are located within the 70 km coastal study area, which comprise;

- 7048 listed buildings;
- 200 scheduled monuments;
- 19 registered parks and gardens; and
- 98 conservation areas.

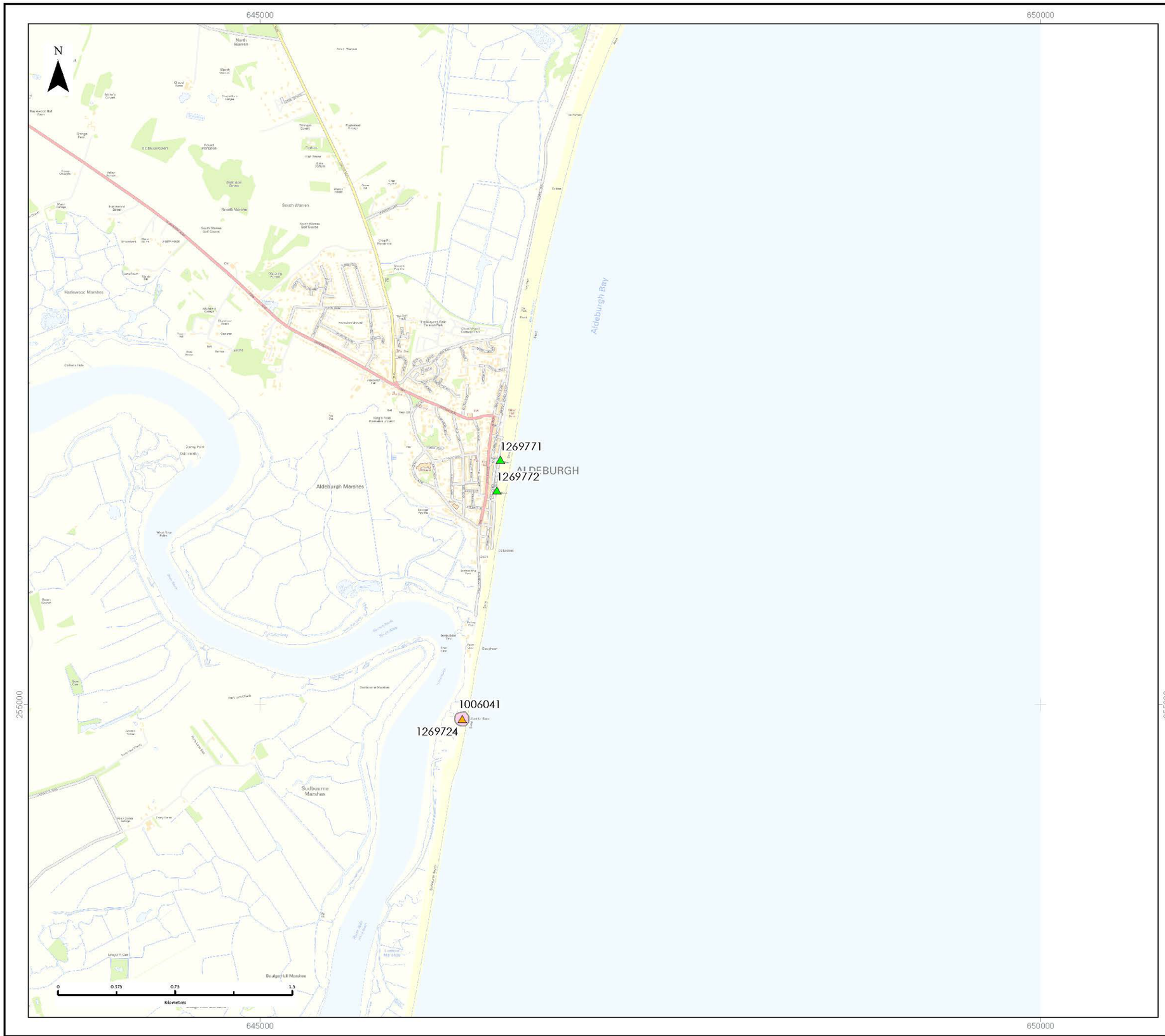
7.7.66 These assets were considered as part of the initial settings assessment (Volume 6, Part6, Annex 7.5: GPA3 Exercise and Technical Note (Offshore Array)) and defined as part of coastal asset groups. Following this initial assessment, the following assets are included for detailed assessment of potential effects arising from the presence of the operational array;

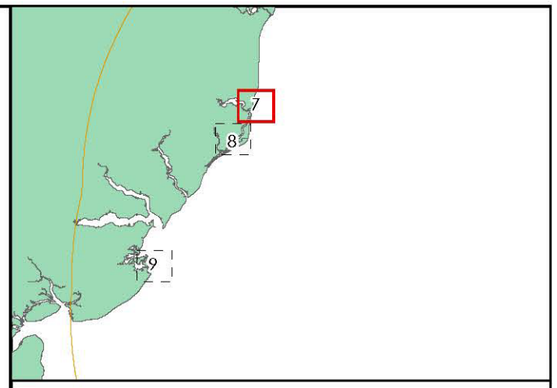
- The North Lookout, Aldeburgh (Grade II listed building; 1269771);
- The South Lookout, Aldeburgh (Grade II listed building; 1269772);
- Martello Tower, Aldeburgh (Grade II* listed building (1269724) and scheduled monument (1006041));
- Orford Castle, Orford (Grade I listed building (1030873) and scheduled monument (1014860)); and
- Naze Tower, Walton (Grade II* listed building; 1165846).

7.7.67 These assets are shown on Figures 7.7-7.9.

7.7.68 The coastal study area contains a number of existing operational OSWFs which form part of the baseline to which the VE OSWF will be introduced. These are relevant to the understanding of the existing setting of the heritage assets considered above. The following operational OSWFs are present within the coastal study area;

- East Anglia ONE (23 km to the north east of the northern VE array area);
- Gunfleet Sands I, II and Demonstration (54 km west of the southern VE array area);
- London Array (36 km to the west of the southern VE array area);
- Thanet OSWF (43 km to the south west of the southern VE array area);
- Greater Gabbard (6.5 km west of the northern VE array area and 3.6 km from the southern VE array area); and
- Galloper (adjacent to the western boundaries of the northern and southern VE array areas).





LEGEND

- Array Areas
- Offshore Array Coastal Study Area
- Grade II* Listed Building
- Grade II Listed Building
- Scheduled Monuments

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PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Designated Heritage assets included for assessment of the Offshore Array

VER	DATE	REMARKS	Drawn	Checked
1	09/02/2024	For Issue	TP	MK

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Figure 7.7

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FIVE ESTUARIES OFFSHORE WIND FARM

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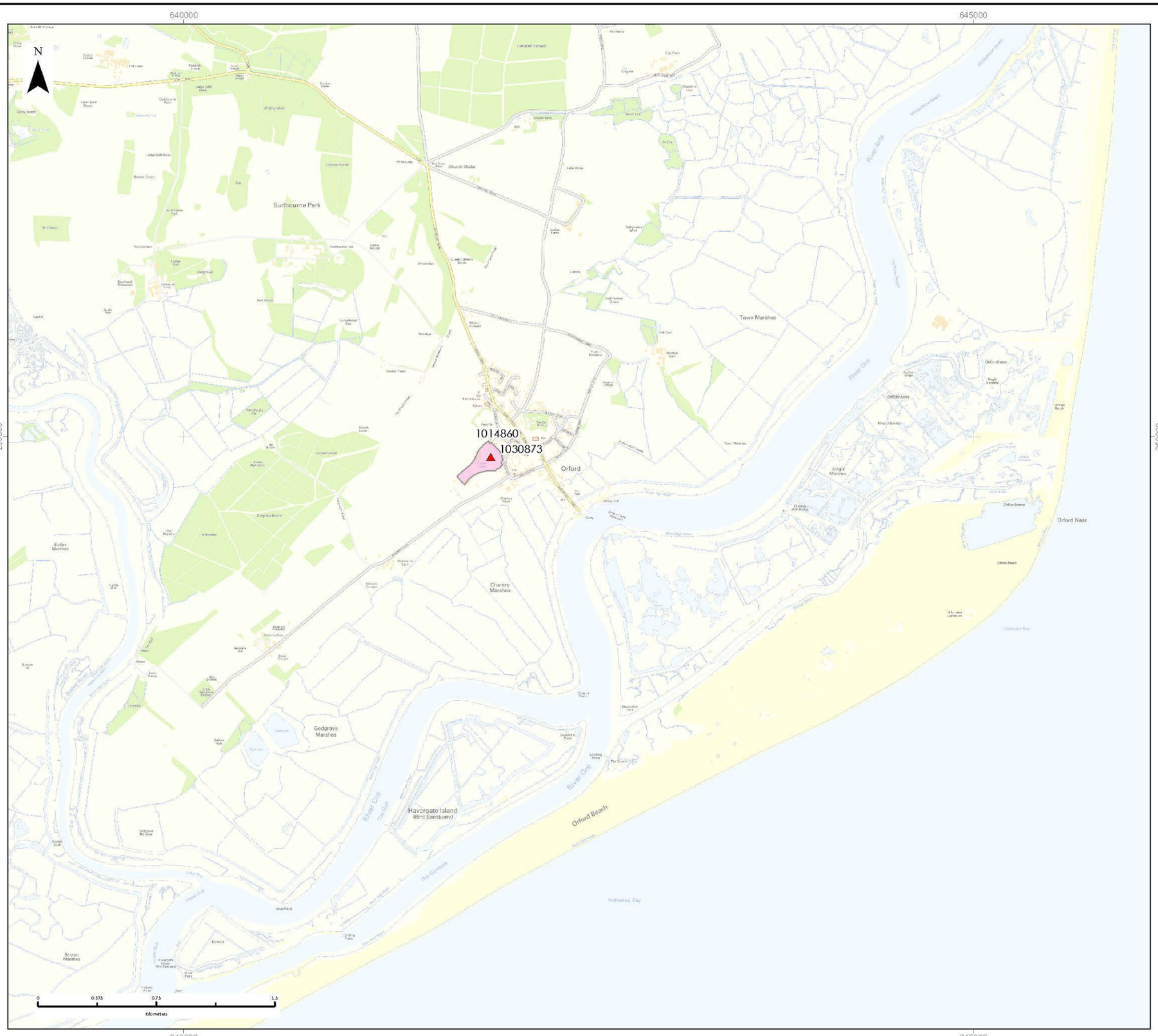

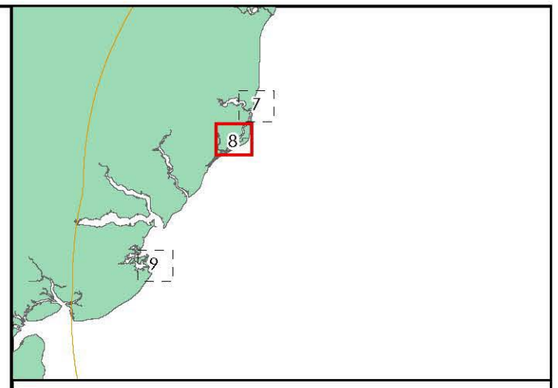

LEGEND

- Array Areas
- Offshore Array Coastal Study Area
- Grade I Listed Building
- Scheduled Monuments

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Designated Heritage assets included for assessment of the Offshore Array

VER	DATE	REMARKS	Drawn	Checked
1	09/02/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.8

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FIVE ESTUARIES OFFSHORE WIND FARM

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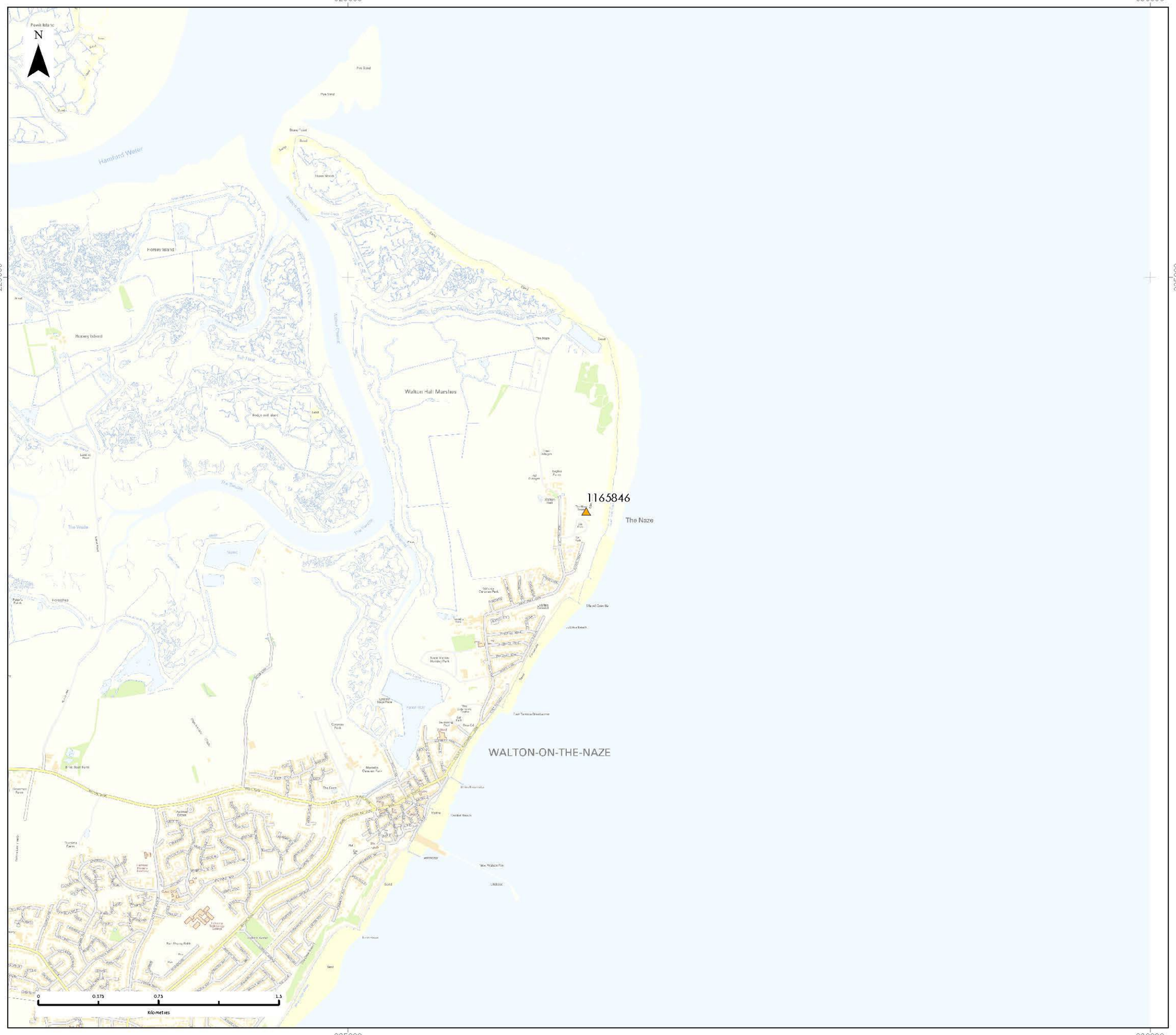

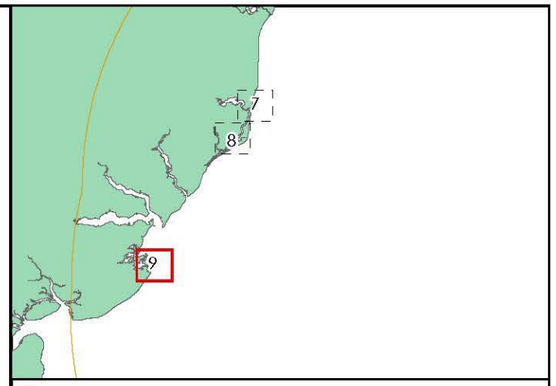

LEGEND

- Array Areas
- Offshore Array Coastal Study Area
- Grade II* Listed Building

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

Designated Heritage assets included for assessment of the Offshore Array

VER	DATE	REMARKS	Drawn	Checked
1	09/02/2024	For Issue	TP	MK

DRAWING NUMBER:

Figure 7.9

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
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FIVE ESTUARIES OFFSHORE WIND FARM

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HISTORIC LANDSCAPE CHARACTER

7.7.69 The core of the Tendring District area comprises a plateau of London Clay, with bands of Kesgrave sands and gravels, marking the former line of the River Thames. The fieldscape is characterised by a mix of later enclosure and pre-18th century irregular fields, probably of medieval origin. The area also comprises long thin roadside greens and triangular greens at road junctions. Historically the settlement character is very dispersed and rural.

7.7.70 Within Tendring at the northern and eastern flank of Colchester were extensive heaths. These were enclosed in the early 19th century. Ardleigh Reservoir (approximately 3.2 km west of the study area) now forms a major landscape feature within the area. To the south, in the Alresford area (over 5 km to the south of the study area), the landscape is gently undulating. The zone is characterised by extensive areas of meadow pasture along the valleys of the three brooks which drain it and large areas of orchards. The fieldscape comprises a mix of pre-18th century irregular fields and later enclosure of common fields. There are extensive areas of mineral extraction to the south. The landscape is similar to the south-east, around St Osyth, although the fields are noticeably smaller. The valley of the Holland Brook forms a distinct landscape element, characterised by enclosed meadows along the brook and drained tidal marshes. Historically the settlement of the area is markedly dispersed.

7.7.71 The coastline is marked by both improved and unimproved coastal marsh. Hamford Water in particular represents a particularly complex landscape of reclaimed marsh, salt-marsh, inter-tidal muds, creeks and islands.

7.7.72 A small number of historic hedgerows which may be considered to be *important* under the hedgerows regulations have been identified along the route through walkover survey and consultation with historic mapping; these are shown on Figure 6, Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment.

7.7.73 The Tendring Historic Landscape Characterisation divides the district into areas, with the Onshore ECC and OnSS passing through seven different characterisation zones. Further details and the scoring system applied through the Tendring District Historical Landscape Characterisation Project has been provided within Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment and has been used to inform the assessment of effects below.

EVOLUTION OF THE BASELINE

7.7.74 The heritage baseline would not evolve as a result of a ‘do nothing’ scenario. Archaeological assets that are presently within the route corridor would remain in situ albeit subject to ongoing agricultural processes. Similarly, the legibility and integrity of the historic landscape and the heritage significance of designated heritage assets would also remain intact in the absence of the proposed development, assuming no other development takes place.

7.8 KEY PARAMETERS FOR ASSESSMENT

7.8.1 There are a large number and wide variety of heritage assets, the heritage significance of which may be affected by VE. Design proposals will be subject to refinement within the detailed design phase, post-consent. Consequently, the effects identified and assessed within Section 0-7.12 below represent a worst case scenario for each individual asset. It is not likely, and in some cases not possible, for the worst case to occur to all heritage assets in any case.

7.8.2 The requirement to identify worst case scenarios for direct effects within the specified design parameters, effectively requires the assumption to be made that any heritage asset within the proposed Order Limits could be affected to the maximum extent possible by the proposed development. Design options, presented through the Rochdale Envelope approach, mean that it would not be possible for the worst case to be realised in every situation, and potentially all worst-case effects could be avoided or reduced from those identified at this stage.

7.8.3 In terms of change in the contribution that setting makes to the heritage significance of a heritage asset, factors to be considered are the magnitude of change as influenced by height, proximity and extent of the WTGs layout or other infrastructure as well as composition. Relatively minor changes to design could, in some cases, make substantial differences, to the assessed magnitude of change (i.e. in the degree to which that setting is changed so that there is a loss in the contribution that setting makes to the heritage significance of an asset, with potential for loss to the overall heritage significance of the asset). Conversely large changes in setting can be acceptable where there is no or minimal loss in the contribution of that setting to the heritage significance of the asset, and no consequent reduction in that asset's overall heritage significance, or in the way the asset is appreciated or understood.

7.8.4 Where worst case effects are identified within the assessment presented in Sections 0-7.12, an explanation is provided of the mechanism by which such effects would arise to allow subsequent assessment to be benchmarked against initial assessments.

7.8.5 The maximum design scenarios identified in Table 7.6 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the details provided in the project description chapters Volume 6, Part 2, Chapter 1: Offshore Project Description and Volume 6, Part 3, Chapter 1: Onshore Project Description. For the purposes of this assessment, it is assumed that all options for the onshore infrastructure (ECC, OnSS, TCC, HDD (or other trenchless technique) will be used to present a worst case scenario. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on the details within the Project Design Envelope to that assessed here, be taken forward in the final design.

Table 7.6: Maximum design scenario for the project alone.

Potential effect	Maximum design scenario assessed	Justification
Construction		
Disturbance or loss of archaeological assets	Site preparation works including installation of temporary access roads, working areas and TCC's	Onshore intrusive construction works can be assumed to disturb or remove any above ground or buried archaeological remains within the construction area. More deeply buried deposits (i.e. deposits of geoarchaeological or palaeoenvironmental heritage significance) may be affected by deeper intrusions, such as HDD sites or by OnSS foundation design. It is assumed that all HDD launch and reception compounds will involve disturbance to the ground surface within the entirety of the compound areas. The same applies to TCC, construction and operational access tracks, road widening works and OnSS location and working areas.
	Landfall activities including the Horizontal Directional Drilling (HDD) works, intertidal trenching and exit pit, construction of Transition Joint Bays (TJB), installation of offshore export cables, installation of and jointing to onshore export cables. Landfall activities expected to take around 6 months.	
	Onshore ECC up to 22 km to take place over an 18 month period. During standard trenched sections the Onshore ECC will be approximately 60m wide. Cabling trench will involve 4 trenches approximately 3.5 m wide and up to 2 m deep using open cut trenching.	
	HDD or other trenchless crossing techniques to be used at crossing points and ecological constraints. Drilling compounds or launch and reception pits to be set up at suitable locations adjacent to each obstacle within the cable corridor. At HDD locations the Onshore ECC will be approximately 90 m wide.	
	Joint pits required approximately every 500 m of cable, resulting in a maximum of 196 joint pits (including those at TJBs). These will be up to 15 m long, 4 m wide and 1 m deep.	

Potential effect	Maximum design scenario assessed	Justification
	OnSS construction to include OnSS preliminary works, widening of Bentley Road from the A120, OnSS Access Zone, Cable Corridor Zone, OnSS footprint and OnSS Construction Area. Construction works are anticipated to take place over 24 months.	
Presence of WTGs and onshore infrastructure construction works (so as to cause loss of contribution of setting to heritage significance of an asset)	Construction of WTG 41 jacket foundations. Peak number of WTG and OSP foundation installation vessels: 38; round trips 1359.	The visual presence of the WTGs would initially be very limited but would gradually increase through the construction period to approach those of the operational WTGs. Given the distance from shore and the temporary nature of construction related effects (from presence of vessels moving through the area, cranes etc) offshore construction specific effects are not considered in relation to onshore heritage assets. However, the potential effect of the constructed offshore array has been considered as an operational effect.
	Construction of up to 41 WTGs. 424 m above LAT (Lowest Astronomical Tide) to tip, 360 m rotor diameter, arranged in a N-S grid formation. Maximum number of WTG installation vessels (includes tugs and feeders): 10; 71 round trips. Other installation vessels; 20. .	
	Construction of 2 OSPs, topside 125 m x 100 m x 105 m tall (above LAT- excluding stowed crane, helideck and mast). Location to be confirmed during detailed design post-consent, but likely to be one OSP per array area. OSP topside installation vessels (includes tugs and feeders): 4; round trips 8.	
	Laying of up to 200 km of inter array cable-peak number of	

Potential effect	Maximum design scenario assessed	Justification
	vessels 12; maximum number of round trips 166.	
	Maximum 35 vessels in the array area at any one time (addition of all maximum numbers unlikely to occur together) Maximum total construction vessels 96; maximum number of round trips 4110.	
	Onshore Onshore landfall work: 6 month construction period Onshore ECC: 18 month construction period OnSS: 24 month construction period	Effects would be greater than operation due to increased visibility of construction plant, vehicle movements and noise, but would reduce over the course of the works. However, effects at any given location along the ECC would be shorter in duration than those specified for the construction period overall given the transient nature of linear construction.
Operation		
Presence of operational offshore and onshore infrastructure (so as to cause loss of contribution of setting to heritage significance of an asset)	Up to 41 WTGs- 424 m above Lowest Astronomical Tide (LAT) to tip, 360 m rotor diameter, arranged in a N-S grid formation Up to 2 OSPs, topside 125 m x 100 m x 105 m tall (above LAT-excluding stowed crane, helideck and mast). Location to be confirmed during detailed design post-consent, but likely to be one OSP per array area.	The final built form of the array area (which includes the maximum height, density and coverage of the WTGs and OSPs) which could have an increase ZTV and prominence within views have been adopted for the purposes of this assessment. The potential effect that results from additional WTGs of smaller size (up to 79 WTGs) is considered to be outweighed by the larger height and scale of the 424 m (up to 41 WTGs), with the overall area occupied by WTGs being equal.
	Maximum 27 vessels in the array area at any one time	
	Onshore: 15 m tall buildings across the OnSS zone (height of GIS option) have been assumed for the maximum design scenario upon a platform measuring 280	Effects would be greater due to increased potential visibility of the OnSS. Note that effects would diminish through time as proposed landscaping around the OnSS establishes and matures. Of the two

Potential effect	Maximum design scenario assessed	Justification
	m x 210 m (footprint of the AIS option).	design options presented the AIS option has the larger footprint and the GIS option has a greater height and more buildings than the AIS option. The MDS has used the larger footprint of the AIS option and the larger height/massing of the GIS option as a worst case scenario, and therefore has the greatest potential for operational effects.
Decommissioning		
Removal of visible infrastructure	Offshore: It is anticipated that the proposed WTGs will be removed at the end of the operation period. Onshore: It is anticipated that the OnSS building will be demolished, and all external switchgear/infrastructure removed. Cable ducts for Onshore ECC to be left in situ with cables removed.	Removal of visible elements of infrastructure would effectively reverse any change to setting and remove any adverse effects (if any). Vehicle movements and demolition activity are anticipated to be limited in comparison to construction phase.

7.9 MITIGATION

7.9.1 Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to onshore archaeology and cultural heritage are listed in Table 7.7. General mitigation measures, which would apply to all parts of the project, are set out first. Thereafter, mitigation measures that would apply specifically to onshore archaeology and cultural heritage issues associated with the array, landfall, Onshore ECC and OnSS, are described separately. The assessed design to some extent is the result of inherent mitigation, as it takes into account key areas of suspected archaeological sensitivity and seeks to minimise or avoid impact.

7.9.2 The mitigation contained within Table 7.7 are mitigation measures or commitments that have been identified and adopted as part of the evolution of the project design of relevance to the topic, these include project design measures, compliance with elements of good practice and use of standard protocols. Where the assessment determined significance effects account for mitigation further measures may be required which are presented as additional mitigation. Table 7.8 presents additional mitigation measures these have been put forward where:

- An effect is significant in EIA terms, even with mitigation, but additional mitigation measures are available to reduce the level of effect; or

- Mitigation has been proposed but has not yet been agreed with regulators/stakeholders or is unproven.

Table 7.7: Mitigation relating to Onshore Cultural Heritage and Archaeology

Project phase	Mitigation measures within the project design
General	
Project Design (Onshore)	Careful routing of the onshore ECC and siting of the OnSS to avoid key areas of sensitivity, based upon the results of the desk-based studies and geophysical survey. The proposed Order Limits has excluded an area to the south of Little Bromley where archaeological remains have been identified which are considered to be of schedulable quality, and which are the subject of a formal proposal for being Scheduled. These remains could become a scheduled monument post application.
Project Design (Offshore)	The northern array area has been reduced from that shown at Scoping which will reduce the number of WTGs present within the space between the existing Galloper OWF, Greater Gabbard OWF and consented East Anglia 2 OWF particularly when viewed from the west between Southwold and Bawdsey.

Table 7.8: Additional mitigation relating to Onshore Cultural Heritage and Archaeology

Project phase	Additional measures
Construction	
Onshore ECC/OnSS	Where practicable archaeological remains of high heritage significance will be avoided and preserved in situ. A wider corridor has been included which allows for micrositing and the option for trenchless techniques. This would be considered if archaeology of high significance is encountered. Preservation in situ is the conservation of an archaeological asset in its original location and is the preferred method of conservation of assets of high or very high heritage significance in accordance with best practice.
Onshore ECC and OnSS	An agreed programme of archaeological investigation work will be put into place to ensure that any heritage assets or deposits of geoarchaeological/ palaeoenvironmental interest that may be present could be identified and recorded. This is secured as a requirement in the DCO. This would need to be in accordance with an Outline Written Scheme of Investigation (Volume 9, Report 23: Outline WSI) has been prepared in consultation with the Development Control Archaeologist advising Essex County Council.

Project phase	Additional measures
	Archaeological investigation and recording would provide a partial mitigation of the loss of archaeological interest and would be less preferable to conservation of a heritage asset in situ (DESNZ 2023). Archaeological investigation and recording are therefore a partial mitigation that would reduce the magnitude of adverse change to a degree dependent on the interests that comprise the heritage significance of an individual heritage asset.
Operation	
Onshore ECC	Reinstatement of ECC works, including landscaping such as hedgerows.
OnSS	Retention and restoration of existing screening planting where practicable and the implementation of new/additional planting and/or landscaping. This would be part of a scheme of landscape mitigation secured in a requirement of the DCO Details of landscape mitigation are set out in Volume 3, Chapter 2 Landscape and Visual Impact Assessment and the Outline Landscape and Ecological Management Plan (Volume 9, Report 22: Outline Landscape and Ecological Management Plan) of this ES.
Decommissioning	
Onshore ECC/ OnSS	It is assumed that no additional ground disturbance will occur during decommissioning, with no consequent effect on potential archaeological remains. No specific mitigation is therefore proposed. Should new areas of land take be required, then the mitigation measures proposed for construction would be applied i.e. the implementation of an appropriate programme of archaeological work, in accordance with details to be set out in a WSI and agreed with the archaeological advisors at Essex County Council.

7.10 ENVIRONMENTAL ASSESSMENT: CONSTRUCTION PHASE

CONSIDERATION OF ONSHORE ECC AND ONSS AND ASSOCIATED CONSTRUCTION ACTIVITIES

7.10.1 This section considers the potential negative effects of the onshore ECC and OnSS that are likely to occur to the heritage assets during the construction phase. This also includes an assessment of other activities which will take place during the construction phase which could have a direct effect upon archaeological assets such as the temporary construction compounds and temporary construction accesses and haul roads.

DISTURBANCE OR LOSS OF DEPOSITS WITH PALAEOLITHIC POTENTIAL AND PALAEOENVIRONMENTAL DEPOSITS

7.10.2 The geoarchaeological desk-based assessment has identified that Pleistocene deposits are likely to be widely present across the route corridor. The Kesgrave sands and gravels, the Anglian Holland Gravel, unmapped post-Anglian fluvial deposits and post-Anglian fluvial deposits of the Holland Brook have potential for Palaeolithic finds. These deposits are considered to be of medium to high heritage significance. Kesgrave sand and gravel was found at 9.2 m bgl in BH203 undertaken at the landfall zone, and at 1.2m bgl and 2 m bgl in boreholes undertaken in the Onshore ECC. The test pitting at the OnSS area found the top of the fluvial sands and gravels at varying depths between 0.5m bgl to 3.20m bgl. Due to the variation in the depths of the gravel deposits with palaeolithic potential, these deposits may be impacted by the cable trench for the Onshore ECC (excavated up to 2 m in depth) and the HDD (or other trenchless technique). This could result in an impact of high negative magnitude to deposits of medium to high heritage significance. This would result in a major to moderate adverse effect prior to mitigation. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within an Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI). Following the implementation of an approved programme of archaeological mitigation this would be reduced to a **minor adverse** effect which is not significant in EIA terms.

7.10.3 Similarly, activities associated with the widening of Bentley Road may result in excavation up to 0.5m in depth across the widening area. Should services need to be relocated this may result in excavation up to 1.5m in depth. These details will be determined in the detailed design phase. As a worst-case scenario, it is possible that deposits with Palaeolithic potential could be affected by these construction activities. This could result in an impact of high negative magnitude to deposits of medium to high heritage significance. This would result in a major to moderate adverse effect prior to mitigation. Following the implementation of an approved programme of archaeological mitigation this would be reduced to a **minor adverse** effect which is not significant in EIA terms.

7.10.4 In the south eastern part of the route there is potential for Holocene alluvium in the area of the Holland Haven Marshes. These deposits may contain peat or organic rich units of palaeoenvironmental potential. Peat and alluvial deposits were recorded in all three of the geotechnical boreholes monitored in April-May 2022 (results presented in Volume 6, Part 6, Annex 7.4: Archaeological and Geoarchaeological Monitoring of Ground Investigation works).

7.10.5 These deposits are considered to be of medium heritage significance. Evidence from the three boreholes records the top of the alluvial deposits to be around 1.2 m bgl at their highest in that area (although this could vary in other parts of this area). Excavations for the Onshore ECC could be up to 2 m in depth and as such these deposits could receive an impact of high negative magnitude. In addition, due to the potentially waterlogged nature of these deposits they may be receptive to effects arising from compression, heat emitted from buried cables, bentonite slurry outbreak, dewatering or drying out of such deposits from construction activities associated with the Onshore ECC. This could lead to a loss of heritage significance through degradation of these deposits and would be a high negative impact. These impacts upon deposits of medium heritage significance would result in a moderate adverse effect prior to mitigation. Through the implementation of an approved programme of archaeological mitigation this could be reduced to a **minor adverse** effect, which is not significant in EIA terms.

7.10.6 There is potential for offsite effects to occur outside of the proposed Order Limits where waterlogged deposits or features extend beyond the extent of the proposed Order Limits. This could include deposits which extend over a distance or features which may have waterlogged elements, where the flow of water through features or deposits could be affected (perhaps severed) by construction activities. This could lead to dewatering or drying out of deposits from construction activities associated with the Onshore ECC and could lead to a loss of heritage significance through degradation of deposits. This would have a high negative impact. These impacts upon deposits of medium heritage significance would result in a moderate adverse effect prior to mitigation. Through the implementation of an approved programme of archaeological mitigation, this could be reduced to a minor adverse effect, which is not significant in EIA terms.

7.10.7 No peat or alluvial deposits were found in geotechnical boreholes or test pitting in other areas of the route.

7.10.8 Construction activities associated with the OnSS have the potential to affect Pleistocene deposits with potential for archaeological remains dating to the palaeolithic (and possibly Mesolithic) period. The test pitting at the OnSS area found the top of the fluvial sands and gravels at varying depths between 0.5 m bgl to 3.20 m bgl. These deposits have Palaeolithic and possibly Mesolithic potential and could be of medium to high heritage significance. Foundation designs for the OnSS have yet to be finalised but could include piled foundations, the depth of which is currently unconfirmed. This would have an effect of high negative magnitude to deposits of medium to high heritage significance. This would result in a major to moderate adverse effect prior to mitigation. Following the implementation of an approved programme of archaeological mitigation this would be reduced to a **minor adverse** effect which is not significant in EIA terms.

7.10.9 The effects identified to deposits within palaeolithic and palaeoenvironmental potential can be mitigated via a programme of archaeological recording leading to preservation by record. After mitigation, the residual effect would be **minor adverse**, which is not significant in EIA terms.

DISTURBANCE OR LOSS OF POTENTIAL ARCHAEOLOGICAL ASSETS IDENTIFIED FROM AERIAL PHOTO AND LIDAR ANALYSIS

7.10.10 Within APZ_10_LZ (Figure 7.10) former field boundaries from aerial photos and LiDAR data have been identified to date to the post-medieval to modern period as these are visible on historic mapping. These features are considered to be of negligible heritage significance and may receive a high negative magnitude of effect through the construction of the Onshore ECC. This would result in a **negligible** effect that is not significant in EIA terms.

7.10.11 Features have been identified within the northern extent of APS_09_LZ (Figure 7.10) from aerial photographs which comprise what is thought to be predominantly field boundaries which overlie earlier features. The field boundary system is thought to date to the post-medieval period and is likely to be of negligible heritage significance. These features would be subject to an effect of high negative magnitude from the Onshore ECC, resulting in a **negligible** effect which is not significant.

7.10.12 The earlier features include ditches and a possible trackway and could be of low to medium heritage significance. These would also be subject to a high negative impact from the construction of the Onshore ECC, resulting in a minor to moderate adverse effect, which would be reduced to a **minor adverse** residual effect following mitigation. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within the Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI).

7.10.13 Features within APS_14_LZ (Figure 7.10) have been identified as square enclosures likely to be post-medieval field systems visible on pre-1970s OS mapping which are considered to be of negligible heritage significance. These features may receive a high negative magnitude of impact through the construction of the Onshore ECC which would result in a **negligible** effect which is not significant in EIA terms.

7.10.14 Within APS_01 to the north of Little Clacton Road, APS_03 and APS_04 to the west of Pork Lane and APS_05, APS_07 and APS_08 to the north east, north and west of Thorpe-le-Soken, field boundaries of unknown date have been identified from aerial photographs and LiDAR data (Figure 7.10-11). These are likely to be of negligible to low heritage significance. These lie within the corridor for the Onshore ECC and would be subject to a high negative magnitude of impact. This would result in a **minor adverse to negligible** effect, which is not significant in EIA terms.

7.10.15 A possible ring ditch has been identified from aerial photographs (APS_09) and was also labelled as tumulus on historic maps. However, it has also been known as 'Mill Hill' suggesting that it may have been a windmill mound (HER no. MEX10843). Should this prove to be a ring ditch rather than a windmill mound, this may date to the Bronze Age and could be of medium heritage significance. This lies within the Onshore ECC and would be subject to an impact of high negative magnitude, resulting in a moderate adverse effect prior to mitigation. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within the Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI). Through the implementation of an approved programme of archaeological mitigation measures this could be reduced to a **minor adverse** effect, which is not significant in EIA terms.

7.10.16 Field boundaries also recorded within APS_09 are likely to be of low heritage significance and would be subject to an impact of high negative magnitude. This would result in a **minor adverse** effect which is not significant in EIA terms.

7.10.17 The southern part of APS_10 has been identified to contain a series of ditches and trackways of unknown date which traverse the Onshore ECC. The ditches and trackways are likely to be of low to medium heritage significance and would be subject to an impact of high negative magnitude from the construction of the Onshore ECC. This would result in a minor to moderate adverse effect prior to mitigation. This would be reduced to a **minor adverse** residual effect through the implementation of an approved programme of archaeological mitigation.

7.10.18 Within APS_11 and APS_14 field systems, field boundaries and ditches of unknown date have been recorded from aerial photographs and LiDAR. These are likely to be of low heritage significance and would be subject to a high negative magnitude of impact as a result of the Onshore ECC. This would result in a **minor adverse** effect which is not significant in EIA terms.

7.10.19 Aerial photos and LiDAR have identified a series of enclosures and field systems within APS_20 which are likely to be of low to medium heritage significance. These features lie within the corridor for the Onshore ECC and TCC's either side of Clacton Road (B1035) and would be subject to a high negative magnitude of impact, resulting in a moderate to minor adverse effect prior to mitigation. This would be reduced to a **minor adverse** effect after mitigation.

7.10.20 Analysis of aerial photos has identified a series of ditches and field boundaries in APS_18. These are likely to be of low to medium heritage significance and may be subject to a high negative magnitude of impact arising from the Onshore ECC dependent upon its route through this search area and the OnSS depending upon its final location. This would result in a moderate to minor adverse effect, reduced to a **minor adverse** residual effect through the implementation of an approved programme of archaeological mitigation. This is not significant in EIA terms.

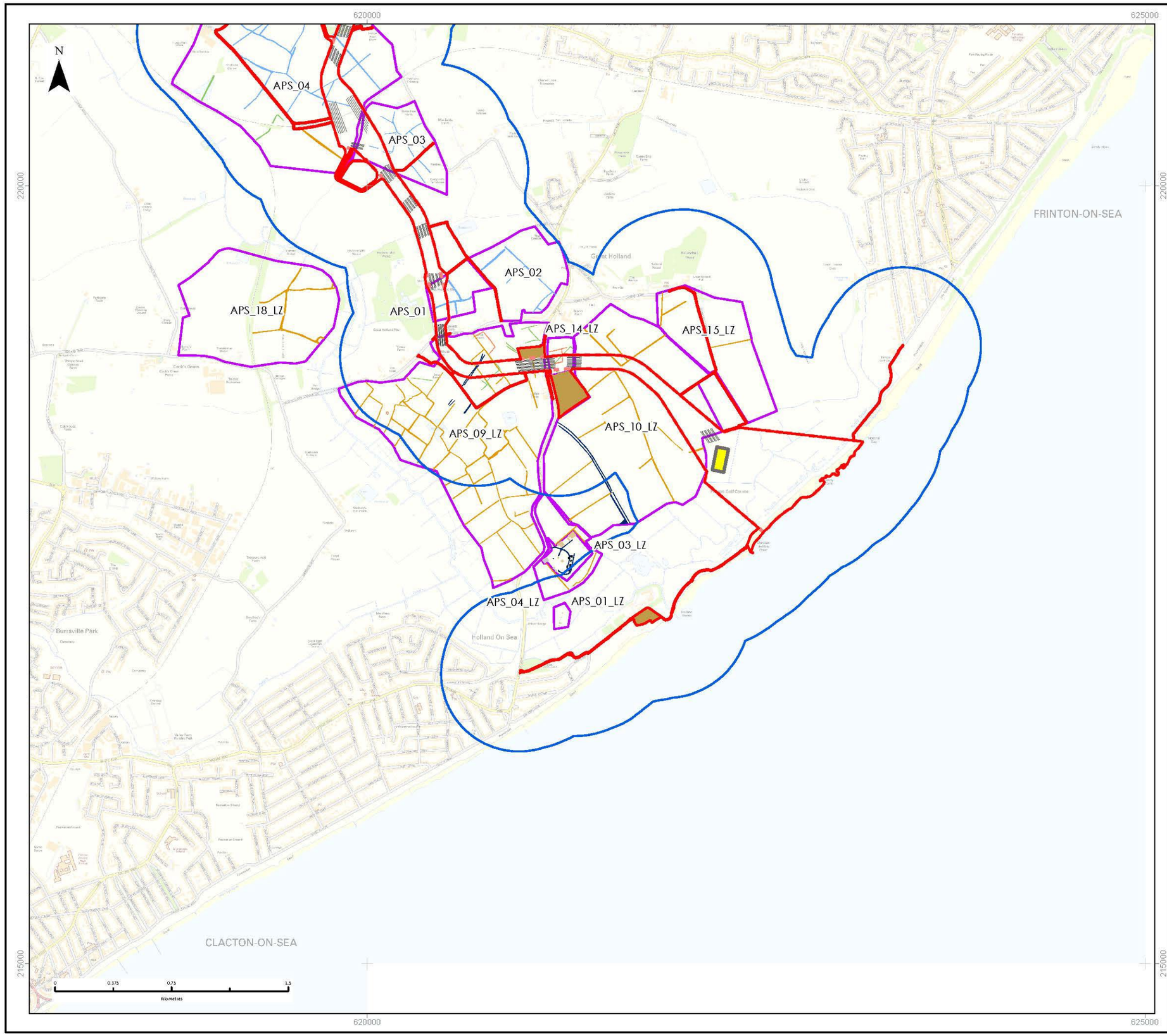
7.10.21 A field boundary was recorded as part of the NMP survey to the west of Bentley Road at the northern TCC location. This is likely to be of low to negligible heritage significance. These lie within another TCC and within the corridor for the Onshore ECC and would be subject to an impact of high negative magnitude. This would result in a **minor adverse to negligible** effect, which is not significant in EIA terms.

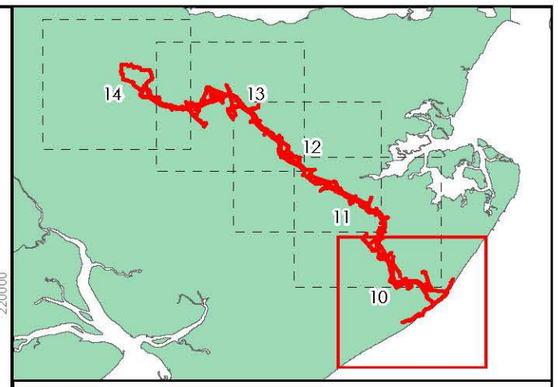
7.10.22 The section of the Onshore ECC between Paynes Lane and the OnSS contains field systems in the east of the area and ditches and a trackway further west identified by APS (APS_19) and the NMP survey. The ditches and trackway lie to the north of a large number of features including a possible henge, a large number of ring ditches and a series of enclosures and ditches. As these features could be associated with the activity to the south, these could be of low (field systems/ditches) to medium (ditches/trackway) heritage significance. As the ditches, field boundaries and trackway lie within the Onshore ECC would be subject to a high negative magnitude of impact. This would result in a moderate to minor adverse effect prior to mitigation, reduced to a **minor adverse** residual effect through the implementation of an approved programme of archaeological mitigation. The residual effect is not significant in EIA terms.

7.10.23 An area within the Order Limits proposed as an off-route access to the OnSS, passes west of the Onshore ECC towards Cattsgreen Farm. Within this area of the proposed Order Limits field boundaries and ditches have been identified from aerial photographs (APS and NMP). These features are likely to be of low heritage significance and may be affected construction activities associated with the off-route access which would have a high negative magnitude of impact to assets of low heritage significance. This would result in a **minor adverse** effect prior to mitigation, which is not significant in EIA terms.

7.10.24 To the west of Grange Road (APS-27) a series of enclosure ditches and a continuation of the roman road from the north east have been identified. These features are likely to be of low and moderate significance. These features could be affected by the Onshore ECC as it connects to the EACN Substation which would be an impact of high negative magnitude. This would result in a moderate and minor adverse effect prior to mitigation, reducing to a **minor adverse** residual effect through the implementation of an approved programme of archaeological mitigation. The residual effect is not significant in EIA terms.

7.10.25 The effects to the potential features identified from aerial photographs and from LiDAR data that have been identified to receive a minor adverse effect can be mitigated via a programme of archaeological recording leading to preservation by record. After mitigation, the residual effect will be **minor adverse**.





LEGEND

- Proposed Order Limits
- Onshore Archaeological Remains Study Area
- Onshore Export Cable Corridor
- Temporary Construction Compounds
- Indicative Landfall Compound
- Indicative Trenchless Alignments
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- Anti Aircraft Defence Site
- Defence Obstruction
- Barrow
- Boundary
- Building
- Ditch
- Enclosure
- Field System
- Henge
- Pit
- Ring Ditch
- Road
- Settlement
- Structure
- Trackway

PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

National Mapping Programme Data and Archaeological Sites and Features mapped by APS

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Figure 7.10

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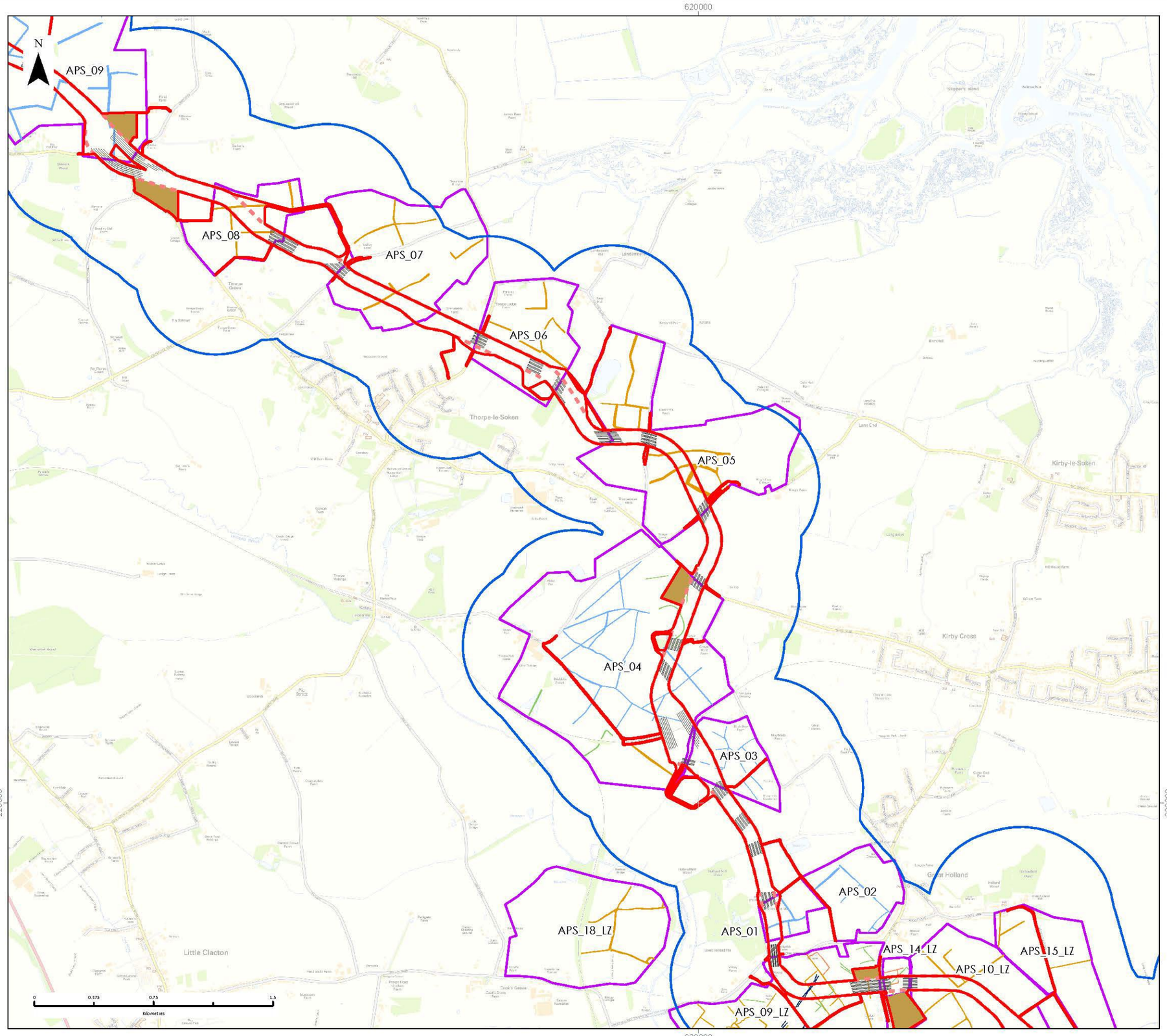

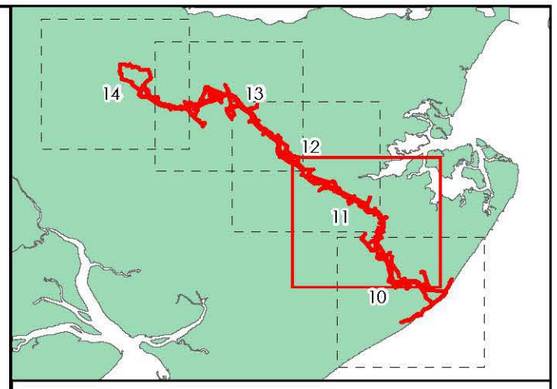

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Figure 7.11

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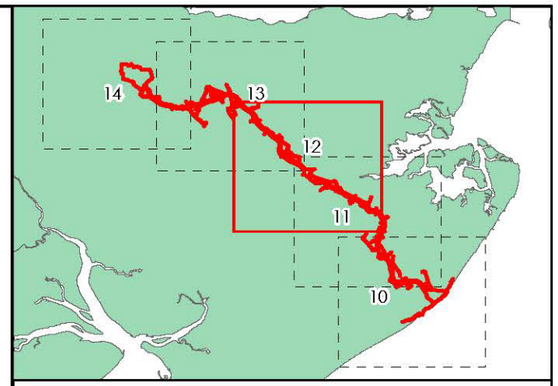

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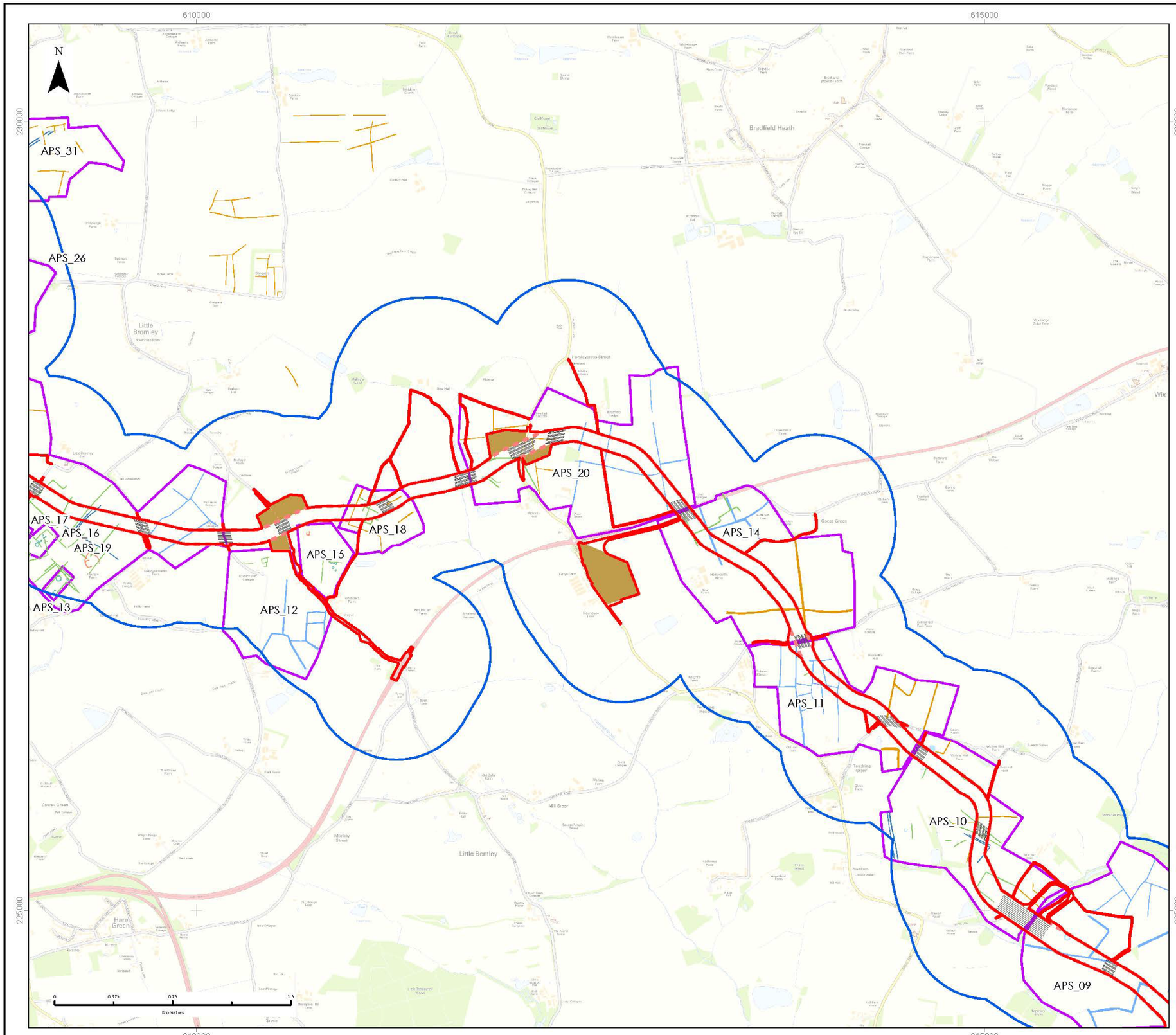

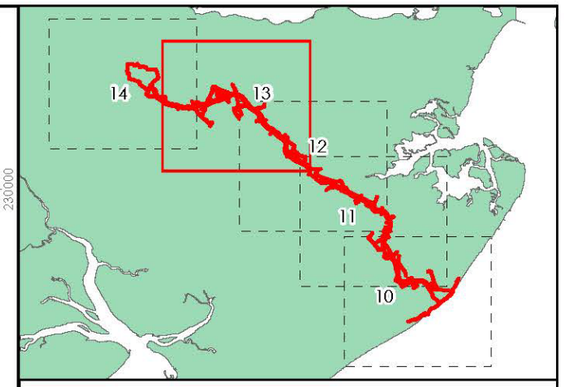

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APS_12

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Lawford

Dedham Heath

Crockleford Heath

Little Bromley

Great Bromley

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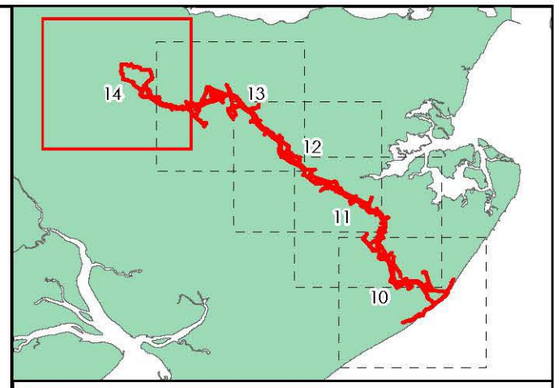

LEGEND

- Proposed Order Limits
- Onshore Archaeological Remains Study Area
- Onshore Export Cable Corridor
- Operational Substation Footprint
- Temporary Construction Compounds
- Indicative Trenchless Alignments
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DISTURBANCE OR LOSS OF POTENTIAL ARCHAEOLOGICAL ASSETS IDENTIFIED AS GEOPHYSICAL ANOMALIES

7.10.26 Geophysical survey within the route has identified geophysical anomalies of possible and probable archaeological origin. The numbers referred to in this section (e.g. (4000)) correspond to the reference numbers assigned as part of the Geophysical Survey report in the text and on the accompanying figures (Volume 6, Part 6, Annex 7.2: Onshore Geophysical Survey).

7.10.27 At Little Clacton Road a weakly positive linear anomaly has been identified perhaps representing a large enclosure (5403). This feature could be of low or medium heritage significance and as a worst case scenario would receive a high negative magnitude of effect as a result of the construction of the Onshore ECC. This would result in an effect of moderate or minor adverse significance prior to mitigation. Through the implementation of archaeological mitigation this would be reduced to a **minor adverse** effect which is not significant in EIA terms. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within the Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI).

7.10.28 Other discrete pit-like features and linear anomalies have been located across the survey area at Little Clacton Road and Kirby Cross West. These features are likely to be of low heritage significance and would receive an effect of high negative magnitude. This would result in a minor adverse effect prior to mitigation and would be reduced to a **negligible** residual effect through the implementation of mitigation, which is not significant in EIA terms.

7.10.29 Features identified at the Holland Haven North Survey area consist of a possible bank and ditch associated with the Gunfleet Estuary (5502 & 5503). This is likely to be of low heritage significance. As a worst case scenario this would be subject to a high negative magnitude of effect through the construction of the Onshore ECC, which would result in a minor adverse effect prior to mitigation. This would be reduced to a **negligible** residual effect through the implementation of mitigation, which is not significant in EIA terms.

7.10.30 An area of geophysical survey was undertaken at Kirby Cross West. Weakly positive rectilinear anomalies were identified forming a possible ditched enclosure (5300). These features are likely to be of low heritage significance. The enclosure is located within the Onshore ECC and as such would receive an impact of high negative magnitude. This would result in a minor adverse effect prior to mitigation, which would be a **minor adverse** residual effect following mitigation measures. This effect is not significant in EIA terms.

7.10.31 South of the railway line within the Kirby Cross West Survey area, a penannular enclosure was identified as a possible archaeological anomaly formed of a circular ditch with an opening on one side (5301). This could relate to prehistoric activity and could be of low to medium heritage significance. The feature is located within the area for a possible entrance/exit pit for HDD (or other trenchless technique), which would have a high negative magnitude of impact. This would result in a minor to moderate adverse effect prior to mitigation, which would be a **minor adverse** residual effect following mitigation measures. This effect is not significant in EIA terms.

7.10.32 A liner feature close to the B1034 was identified during the geophysical survey (5201) of Area 20. This is of unknown date but could be a boundary ditch and is likely to be of low heritage significance. This is located within an area which would use a trenchless crossing of the B1034 and due to the proximity of this feature to the road it is likely that the HDD (or other trenchless technique) would be beneath this feature preserving the feature above. As such no effect to this feature as a result of the proposals is anticipated.

7.10.33 Further north within Area 20 a ditch-like feature with an adjoining rectangular enclosure was identified through geophysical survey (5200). This feature may relate to a field boundary and/or small enclosure and could be of low to medium heritage significance. It is possible that this feature may fall within the area required for an entrance/exit pit for HDD (or other trenchless technique) to cross Damants Farm Lane, which would have a high negative magnitude of impact. This would result in a minor to moderate adverse effect prior to mitigation, which would be a minor adverse residual effect following mitigation measures. This effect is not significant in EIA terms.

7.10.34 A circular anomaly was identified within Area 18 which may relate to a possible roundhouse or ring ditch associated with a barrow. This feature may be of medium heritage significance and would be subject to a high negative magnitude of impact from the construction of the Onshore ECC. This would result in a moderate adverse effect prior to mitigation which would be reduced to a minor adverse effect following the implementation of mitigation measures. This effect is not significant in EIA terms.

7.10.35 Survey undertaken east of Tendring identified a linear anomaly likely to represent a ditch or field boundary (4801) has been identified likely to be of low heritage significance. This would be subject to an effect of high negative magnitude as it is located within a TCC area. This would result in a minor adverse effect prior to mitigation which would be a **minor adverse** residual effect following mitigation measures. This is not significant in EIA terms.

7.10.36 In the southern part of Area 12 a linear feature possibly representing a ditch or field boundary has been identified (4700) which is likely to be of low heritage significance. This feature lies within the area where HDD (or other trenchless technique) is due to take place. As this lies outside of the area proposed for the entry/exit pits and will be drilled to a depth greater than the sub-surface archaeological remains this feature would be preserved in situ and not subject to physical effects.

7.10.37 Within the Tendring Green north survey area, two linear anomalies (4603 and 4604) have been identified within the Onshore ECC which are likely to be of low heritage significance. These would be subject to a high negative magnitude of effect which would be a minor adverse effect prior to mitigation. This would remain as a **minor adverse** effect following mitigation measures which is not significant in EIA terms.

7.10.38 Within survey Area 10 a semi-circular enclosure (4500) and part of a possible rectilinear enclosure (4501) have been identified which are likely to be of low to medium heritage significance. This would be subject to a high negative magnitude of effect as a result of the Onshore ECC (4600) and the TCC (4501). This would result in a minor to moderate effect prior to mitigation. This would be reduced to a **minor adverse** effect through the implementation of a programme of archaeological mitigation, which is not significant in EIA terms.

7.10.39 Evidence for possible settlement or animal husbandry was identified within Area 5 as a rectilinear enclosure with a number of internal features (4200-4201) as well as another rectilinear enclosure suggestive of industrial use (4203). These features are likely to be of medium heritage significance. These features lie partially within the Onshore ECC (4200-4201) and partially within a TCC (4203) and could be subject to a high negative magnitude of effect by through construction activities which would result in a moderate effect prior to mitigation. Through the implementation of mitigation measures this would be reduced to a **minor adverse** effect, which is not significant in EIA terms.

7.10.40 Several linear anomalies (4102-4107) have been identified across Area 4 which are likely to be of low heritage significance and would be subject to a high negative magnitude of effect. This would result in a minor adverse effect prior to mitigation and would remain as a **minor adverse** effect. This is not significant in EIA terms. Two penannular anomalies with possible associated discrete features (4112) have also been detected within Area 4 which may be of moderate heritage significance. These would be subject to a high negative magnitude of effect which would be an effect of moderate significance prior to mitigation. Following mitigation this would be reduced to a **minor adverse** effect, which is not significant in EIA terms.

7.10.41 Some of the field boundaries identified as part of the geophysical survey, can also be seen on historic mapping, across the geophysical survey areas. These are likely to be of post-medieval or modern date and as such are likely to be of negligible heritage significance. These may be subject to impacts of high negative magnitude through the construction of the OnSS, Onshore ECC and TCC's and as such could receive a **negligible effect**, which is not significant in EIA terms.

7.10.42 The features that have been identified through geophysical survey to receive a minor adverse effect can be mitigated through archaeological investigation and recording leading to preservation by record. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within the Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI). After mitigation the residual effect would be **minor adverse** which is not significant in EIA terms.

ARCHAEOLOGICAL FEATURES IDENTIFIED THROUGH TRIAL TRENCH EVALUATION

7.10.43 Archaeological features were identified during the Phase 1 evaluation at the OnSS area. A single featured dated to the prehistoric period was identified in the north eastern corner of the area (Volume 6, Part 6, Annex 7.8). This feature was not previously identified as part of the geophysical survey but is likely to continue beyond the limits of the trench. This feature is considered to be of low heritage significance. The feature lies at the northern edge of the proposed Order Limits which is excluded from the areas proposed for the construction of the OnSS and working areas but may be subject to landscaping or planting. Adopting a worst-case scenario, this feature of low heritage significance would be subject to a high negative magnitude of effect, resulting in a **minor adverse** effect which is not significant in EIA terms.

7.10.44 A potential Roman road had been identified in the northern part of the Phase 1 area from the aerial photograph analysis and geophysical survey. This was represented by two parallel ditches which were found during the evaluation, although they did not contain any dating evidence. No metalled surface between the ditches was found. This feature is considered to be of medium heritage significance. The potential roman road is within the northern part of the OnSS area which may be subject to landscaping and/or planting; adopting a worst case scenario, this would have a high adverse magnitude of effect. This would result in a moderate adverse effect prior to mitigation, reduced to a **minor adverse** residual effect through the implementation of an approved programme of archaeological mitigation and would be not significant in EIA terms. The types of mitigation measures to be applied are set out above in Table 7.8 and are detailed within the Outline Written Scheme of Investigation submitted with the DCO application (Volume 9, Report 23: Outline WSI).

7.10.45 Medieval features were found in a single trench within the Phase 1 evaluation, consisting of two possibly medieval ditches and a medieval pit. These features are considered to be of low heritage significance and lie within the area that may be used for landscaping/planting to the north of the OnSS and construction compounds. These features of low heritage significance would be subject to an effect of high negative magnitude which would result in a **minor adverse** effect. This is not significant in EIA terms.

7.10.46 A single cremation burial was found during the archaeological evaluation. The feature was fully excavated and recorded but no dating evidence for the burial was recovered. This feature lies within the works area for the OnSS, but as this feature has been fully recorded no further effects to this can occur as part of the construction activities associated with the OnSS.

7.10.47 Several phases of land management/field boundary systems were identified across the Phase 1 area (most of which had been previously identified through geophysical survey and aerial photograph analysis). Most of these features did not contain any dating material although a small number contained post-medieval or modern evidence. These features are considered to be of negligible heritage significance and are located within the areas for the OnSS works area. This would be an effect of high negative magnitude on assets of negligible heritage significance resulting in a **negligible effect**, which is not significant in EIA terms.

7.10.48 The Phase 2 Trial Trenching at the OnSS found five land management/field boundaries that were dated to the post-medieval to modern period. These features are considered to be of negligible heritage significance and are located within the OnSS works area and may be subject to construction activities arising from the OnSS, the construction compound, accesses and connecting cables. This would be an effect of high negative magnitude on assets of negligible heritage significance resulting in a **negligible effect**, which is not significant in EIA terms.

7.10.49 The Phase 2 Trial Trenching also recorded a number of linear features which are of unknown date. It is likely that these features will also relate to land management but due to the uncertainty surrounding their date, these could be of low to medium heritage significance. Construction activities within the footprint of the OnSS, the construction compound, Onshore ECC connecting to the EACN substation and associated ponds and landscaping would have an effect of high negative magnitude on features of low to medium heritage significance resulting in a minor to moderate adverse effect prior to mitigation. This would be reduced to a **minor adverse** effect through the implementation of mitigation measures, which is not significant in EIA terms.

DISTURBANCE OR LOSS OF OTHER FEATURES RECORDED ON HISTORIC ENVIRONMENT RECORD

7.10.50 An extant pillbox has been recorded on the EHER and was confirmed through the site walkover within the proposed Order Limits. The pillbox is built into the sea wall and is a Type 22 pillbox, which is a relatively common type and as such are considered to be of low heritage significance. This structure would be avoided as part of the works within the Onshore landfall zone and as such no adverse effects to this structure will occur.

7.10.51 At the landfall zone the possible remains of Martello Tower H are recorded within the proposed Order Limits. The tower is known to have been demolished but there is a possibility that below ground remains could still exist. This is likely to be of low to moderate heritage significance. The construction of the Onshore ECC would result in an effect of high negative magnitude on a potential asset of low to moderate heritage significance, resulting in a minor to moderate adverse effect. This would be reduced to a **minor adverse** effect following the implementation of an approved programme of archaeological mitigation and is not significant in EIA terms.

7.10.52 The historic environment record also records possible remains relating to copperas works close to the landfall. Any remains associated with this are considered to be of low heritage significance. The construction of the Onshore ECC would result in an effect of high negative magnitude on a potential asset of low heritage significance, resulting in a **minor adverse** effect which is not significant in EIA terms.

DISTURBANCE OR LOSS OF AT PRESENT UNKNOWN ARCHAEOLOGICAL REMAINS

7.10.53 The area within the proposed Order Limits has the potential for as yet undiscovered archaeological remains which are currently of unknown date and heritage significance. In particular there is potential for remains relating to the Bronze Age and Romano-British periods to exist within the proposed Order Limits but also archaeological remains for other periods could be found. As the form, nature, date and heritage significance of such remains is currently unknown, the significance of effect is also unknown. However, based upon the evidence gathered for the baseline, and using professional judgement based upon past experience of similar remains, some inferences can be made. Potential for as yet unknown archaeological remains could date to the Bronze Age, Iron Age or Romano-British periods, with some potential for medieval and post-medieval use of the landscape. Bronze Age activity relating to funerary activity, settlement, other activity could be of medium heritage significance. There is a possibility that Iron Age settlement or use of the landscape could also be found and remains of this date could be of low or medium heritage significance if present. Evidence for Romano-British roadside settlement, other settlement or use of the landscape is also likely to be of low to medium heritage significance. Evidence for medieval or post-medieval use of the landscape is likely to be of low heritage significance.

7.10.54 Construction activities are likely to cause damage or destruction of such remains, removing their evidential value. This is an impact of high negative magnitude of impact upon assets with low to medium heritage significance. The effect of this is assessed as a minor to moderate adverse effect. Through the implementation of the mitigation measures described in Table 7.8 and below, the effect would be reduced to a **minor adverse** effect which is not significant in EIA terms.

7.10.55 The foreshore walkover survey only identified the remains of the former wooden groynes on the foreshore which are of negligible heritage significance. There is potential for as yet unknown archaeological remains to be buried upon the foreshore which could be of low to medium heritage significance. Effects arising from the construction activities within the landfall exit pit including excavation and sheet piling have the potential to affect as yet unknown archaeological remains. The magnitude of impact would be major to assets of low to medium heritage significance resulting in a minor to moderate adverse effect prior to mitigation. Through the implementation of mitigation measures, the effect would be reduced to a minor adverse effect, which is not significant in EIA terms.

MITIGATION

7.10.56 Mitigation measures proposed to minimise the potential adverse effects to buried archaeological remains resulting from the construction phase will be achieved through preservation by record. Preservation by record will consist of an approved programme of archaeological fieldwork and recording which will lead to the creation of an archaeological archive so that the remains can be preserved by record for future generations. Fieldwork recording may vary across the Onshore ECC and OnSS locations depending upon the archaeological resource but may include watching brief, trial trenching, test pitting, purposive geoarchaeological boreholes, strip map and sample investigation or formal excavation as appropriate. Additional non-intrusive survey may also be undertaken. A programme of post-fieldwork assessment and analysis of the archive generated by fieldwork will be agreed, leading to publication and dissemination of the results of that work and the creation and deposition of a project archive in a suitable receiving museum or other body.

7.10.57 Details of archaeological fieldwork are set out in the Outline Written Scheme of Investigation (Volume 9, Report 23: Outline WSI) and agreed with the Development Control Archaeologists at Essex County Council. The WSI details the method, areas, techniques to be applied as well as programme in the context of the post-consent, pre-construction period.

7.10.58 Where moderate and minor negative effects are reported above during the construction phase, the application of mitigation will reduce these effects to the residual effects given above for each asset and summarised in Table 7.12: Summary of effects for Archaeology and Cultural Heritage.

7.10.59 The implementation of a programme of archaeological work (including post-excavation assessment, publication and archive deposition) as set out in any agreed Written Scheme or Schemes of Investigation is secured through a requirement in the DCO.

DIRECT EFFECTS TO POTENTIAL HISTORIC HEDGEROWS DURING CONSTRUCTION

7.10.60 There are a small number of potential historic hedgerows within the proposed Order Limits which may be considered to be important under the Hedgerow Regulations 1997 (as amended 2002). These are shown in Figure 6 of Volume 6, Part 6, Annex 7.1: Archaeological Desk-Based Assessment. Three sections of hedgerow are aligned within the Onshore ECC. The historic hedgerows are considered to be of low heritage significance representing boundary features of typically local importance. All three of the potentially historic hedgerows lie within areas that are proposed for HDD (or other trenchless technique) which will be drilled either side of the hedgerow to avoid disturbance. As such these hedgerows will be retained and no significant effects to the hedgerows (or the historic landscape which they are part of) are anticipated as part of the proposals.

7.10.61 No potentially historic hedgerows have been identified within the OnSS area and as such there will be no permanent loss of potentially historic hedgerows through the construction of the OnSS.

INDIRECT EFFECTS UPON HERITAGE SIGNIFICANCE DURING CONSTRUCTION

7.10.62 Indirect effects during the construction phase could arise from activities such as construction traffic, flashing lights on moving vehicles, noise and dust created by construction activities. An assessment has been undertaken for assets within 500 m of the Onshore ECC and within 2 km and 5 km (for highly designated assets) from the OnSS, within Volume 6, Part 6, Annex 7.6: GPA3 Exercise and Technical Note (Onshore Project Area). This initial assessment follows the Historic England Guidance (2017), and describes the asset, its setting, its significance, the contribution of setting to significance and a rationale as to whether the asset is included or excluded within the chapter based upon the likelihood of a significant effect. Those assets as identified as being potentially sensitive to the Proposed Development are included for detailed assessment below.

GREAT HOLLAND MILL HOUSE, GRADE II LISTED BUILDING (1111532)

7.10.63 Great Holland Mill House is located adjacent to the proposed Order Limits within which the Onshore ECC will be located. The asset is Grade II listed and is of high heritage significance. The immediate setting of the house consists of the mill complex within which it sits, which includes a courtyard, mill base, storage buildings, ranges and granary. The wider setting of the asset comprises the agricultural land which surrounds it on the northern and eastern sides. The mill building is separated from the agricultural land by a mid-height wall although this does not restrict visibility between the two. On the eastern side is an area of woodland; a nature reserve.

7.10.64 The heritage significance of the asset is principally derived from its architectural interest as an early to mid-19th century mill house. The associated structures in particular the remains of the mill and the granary contribute to both the historic and architectural interests of the house in understanding the building as part of a working mill complex and its role as the domestic part of this rural industry. In this way its immediate setting contributes to the heritage significance of the asset. The wider agricultural setting makes a smaller contribution to heritage significance but does represent land that is likely to have been associated with the mill and may have provided some of the corn for the milling activities here. Whilst this is not directly related to the function of the house itself, it does aid the understanding of the mill complex as a whole and contributes to the historic interest of the asset.

7.10.65 The construction of the Onshore ECC will be located within the field adjacent to the asset as the proposed Order Limits are adjacent to the boundary wall of the mill complex. This will also include open cut trench and HDD (or other trenchless technique) beneath the hedgerow which lies adjacent to the mill complex. Construction activities such as the excavation of the cut and cover trench, exit and entry pits for HDD, flashing lights on moving plant, noise and dust will take place within the proposed Order Limits within the setting of the asset. Such effects would be short term and temporary during the construction phase only. Following the construction the field will be returned to agricultural land. The magnitude of impact of these activities is assessed as low negative, upon an asset of high heritage significance, resulting in a temporary **minor adverse** effect. This is not significant in EIA terms.

HEMPSTALL'S FARMHOUSE, GRADE II LISTED BUILDING (1240504)

7.10.66 Hempstalls Farmhouse is a 17th century or earlier building and is Grade II listed and of high heritage significance which lies 220 m from the proposed Order Limits. The house is set back from the main roads and lies within a farmstead which forms the immediate setting of the asset. The farmhouse is accessed via a farm track and is surrounded by agricultural fields which form the wider setting of the asset.

7.10.67 The heritage significance of the asset is drawn from its architectural interest as an example of a 17th century farmhouse with surviving architectural details and its historic interest as part of a working farm from the 17th century onwards. It is within the immediate setting of the asset that the architectural details of the building can be best appreciated. The historic interest is derived from the role of the farmhouse as the domestic part of the farmstead and this can be best understood from the area surrounding the house itself and within the farmstead. The isolation of the farmstead from any other buildings and its distance from the surrounding main roads enhance the way in which the rural function and character of the building are appreciated from its wider surroundings. The continued use of the surrounding land for agriculture also enhances the appreciation of the complex as a rural farmstead (its historic interest).

7.10.68 A TCC will be located 350 m to the west of the farmhouse and will cover part of the farmland associated with the house. The Onshore ECC will be located in the fields to the north and east of the farmstead, with a HDD location (or other trenchless technique) to the north under the A120 and to the south under Stones Green Road. Access between the Onshore ECC and the TCC will be taken adjacent to the A120 and will cross the track which leads to the farm. Construction activities will take place on the western, northern and eastern sides of the asset within its wider setting. Effects arising from plant and vehicle movement within the TCC, storage of materials in the TCC, excavations for the Onshore ECC, entry and exit pits for the HDD (or other trenchless technique), flashing lights on moving vehicles, noise and dust will have a temporary effect of low negative magnitude. The asset is of high heritage significance and these activities will result in a temporary **minor adverse** effect, which is not significant in EIA terms.

ABBOTTS HALL, GRADE II LISTED BUILDING (1261150)

7.10.69 Abbotts Hall dates to the 17th century or earlier and is a Grade II listed building of high heritage significance. The asset lies within a complex of farm buildings, although does lie separately from them to the north. The front façade of the farmhouse faces toward the main road although it is well screened by mature trees. To its north east and west are areas of gardens and to the south and south west is the driveway and the agricultural buildings which are considered to form its immediate setting. Beyond the farmstead are agricultural fields and three reservoirs which form its wider setting.

7.10.70 The heritage significance of the asset is largely drawn from its architectural interest as a 17th and 18th century farmhouse. The house has some historic interest due to its age, but is not connected with any notable architect or family. It is from within its immediate setting that the architectural details and age of the house can be realised; its immediate setting contributes to its heritage significance through the appreciation of the architectural and historic interests. The wider surroundings make a smaller contribution in that the agricultural surroundings reinforce the understanding of the house as part of a farmstead complex, being the domestic area of a working farm, which allow the understanding of its historic interest.

7.10.71 . The Onshore ECC passes to from the east, north and to the west of the asset, with a TCC on either side of the ECC approximately 250m to the north of the farmhouse. Two separate sections of HDD (or other trenchless technique) will occur to the north of the asset, crossing Clacton Road (B1035) and two sections of hedgerow to the north east. The effects arising from the TCCs, Onshore ECC and excavation for entry and exit pits for HDD (or other trenchless technique) could include storage of vehicles and materials, flashing lights on moving vehicles noise and dust. These activities could have a low negative magnitude of impact on an asset of high heritage significance. This would result in a temporary **minor adverse** effect, which is not significant in EIA terms, lasting only for the duration of construction activities at this location. The use of HDD (or other trenchless technique) will remove the need for cut and cover excavation for the cable in the areas closest to the asset, restricting the presence of construction vehicles, noise and dust to the entry and exit pits rather than the route itself over a short distance.

GREAT HOLLAND LODGE, GRADE II LISTED BUILDING (1337116)

7.10.72 Great Holland Lodge is an early 19th century timber framed house which is Grade II listed and of high heritage significance. The setting of the asset consists of its immediate surroundings which include the adjacent farmstead and its surrounding agricultural landscape which form its wider setting. The house is associated with the farmstead but intentionally separated from it, making a distinction between the working area and the domestic area.

7.10.73 The heritage significance of the asset is principally derived from its architectural interest, as a well preserved and attractive example of a 19th century house with associated farm. Architectural details such as the chimney stacks, the two storey bay windows, choice of brickwork and pediment provide the architectural interest of the building and are best appreciated from the immediate surroundings of the asset. The house has some historic interest associated with its adjacent farmstead which can be seen on historic maps from 1874. The house is not known to be associated with any notable architect or family. The house draws some of its heritage significance from its wider agricultural surroundings which assist in the appreciation of the historic interests of the house and its domestic role, distinct from the adjacent working farmstead. The house fronts the main road with views across the road to the surrounding farmland.

7.10.74 A TCC will be located on the opposite side of the road to Great Holland Lodge with a haul road and entrance for construction vehicles located to the immediate north east of the asset. A second TCC will be located on the northern side of the Onshore ECC, 150 m to the north. The Onshore ECC to the north of the asset will use HDD (or other trenchless technique) which will restrict the presence of construction activities, noise and dust to the entry and exit pits which will be located, 200 m to the north west and 250 m to the north east. The section of the Onshore ECC to the immediate north of the asset will be drilled underground. Effects from construction traffic, noise, dust, storage of vehicles and materials, and flashing lights on moving plant within the TCCs and entry and exit pits for HDD, could have a temporary impact of low negative magnitude (only for the duration of the construction works at this location). This impact to an asset of high heritage significance would result in a temporary **minor adverse** effect, which is not significant in EIA terms.

CHURCH OF ST MARY, GRADE II* LISTED BUILDING (1337175)

7.10.75 Church of St Mary is the parish church of Little Bromley and has its origins in the 12th century. The church is Grade II* listed and is of high heritage significance. The church lies at a bend in Spratts Lane. Little Bromley is a relatively dispersed settlement and as such the church lies within a relatively isolated position; its nearest neighbours being the rectory over 300 m away and agricultural buildings 70 m to the north. The agricultural buildings are on the site of the farmstead associated with former Little Bromley Hall which no longer exists above ground. The Hall sat adjacent to the church, as shown on historic mapping and it is likely that the church was constructed as part of the original manor. This plot is now a vacant grassed area. The immediate setting of the asset consists of the churchyard, the area of the former Little Bromley Hall and its associated farmstead. The wider setting comprises the surrounding agricultural land and extends to the associated rectory.

7.10.76 The heritage significance of the asset is derived from its architectural interest representing ecclesiastical architecture from the 12th-19th centuries through extensions, alterations and repairs. The church also has historic interest through its connections to the now lost Little Bromley Hall, monuments to notable local people (the Risbie family in 1700s- perhaps the owners of the hall at this time) and local craftspeople such as the iron foundry and bell foundry. The church also likely has some archaeological interest due to its age, former parts of the church and also its churchyard. Some archaeological interest could be derived through its connection to buried remains associated with the adjacent Little Bromley Hall. The immediate and wider setting of the asset does make some contribution to heritage significance, as its agricultural surroundings point to its former connections to Little Bromley Manor and the tower is a local landmark within an otherwise undeveloped area. These aid the understanding of the church as part of a historic rural manor and allow the appreciation of the architectural details and age of the church.

7.10.77 The construction for the Onshore ECC will take place in the field to the immediate south of the Church, at a distance of approximately 200 m. This field has no extant boundary at its northern edge closest to the church and as such the works will not be screened by any existing boundary. Barlon Road to the south west of the church will be crossed using either HDD (or other trenchless crossing technique) or using an open cut trench. Construction effects arising from the Onshore ECC open cut trench and/or HDD could include dust, noise, flashing lights on moving plant and excavations. This effect would be temporary and is considered to be of low negative magnitude (only for the duration of the construction activities at this location). The asset is of high heritage significance and therefore this would result in a temporary **minor adverse** effect, which is not significant in EIA terms. Following the construction phase this area will be returned to agricultural use, restoring the setting of the asset.

BOUNDS FARMHOUSE, GRADE II LISTED BUILDING (1147743)

7.10.78 Bounds Farmhouse is thought to date to the 17th/ 18th century. The proposed OnSS lies opposite the house on the other side of Hungerdown Lane. The setting of the farmhouse is defined by its isolated position, situated within a domestic garden with agricultural buildings to the north. Beyond this, the house is surrounded by open agricultural fields to its east and south, however garden nurseries with extensive areas of polytunnels have been constructed immediately to the west and north of the farmhouse, although the polytunnels are not appreciable when experiencing the asset from Hungerdown Lane.

7.10.79 The heritage significance of the asset is drawn from its architectural interest as a farmhouse from at least the 17th century. This is best appreciated from within the immediate surroundings of the asset, that is, from its domestic garden and around the adjacent farmstead. The small rural lane and isolated position also contribute to its setting providing a quiet and rural character to the area. The wider surroundings also contribute although the areas now converted for use as a garden nursery make a neutral contribution to heritage significance.

7.10.80 The asset lies adjacent to the area National Grid EACN Substation zone which will be located within this area included within the proposed Order Limits. As such as part of the Proposed Development the Onshore ECC will extend from the VE OnSS to the National Grid EACN Substation via the onshore cable. This will take place within the area on the opposite side of the road to the asset which forms part of its setting. Construction activities associated with the Onshore ECC such as noise, dust, flashing lights on moving vehicles are expected to have a low negative effect on the asset of high heritage significance (only for the duration of the construction works at this location). This would result in a temporary **minor adverse** effect that is not significant in EIA terms.

7.11 ENVIRONMENTAL ASSESSMENT: OPERATIONAL PHASE

ONSHORE ECC AND ONSS (DIRECT EFFECTS)

DISTURBANCE OR LOSS OF ARCHAEOLOGICAL ASSETS DURING OPERATIONAL PHASE

7.11.1 It is not anticipated that the operational phase will have any direct physical effects to any archaeological assets within the proposed Order Limits. The effects to archaeological sites identified as sensitive receptors during the construction phase will have been mitigated prior to and during that phase and no further effects during the operational phase are envisaged.

DIRECT EFFECTS TO POTENTIAL HISTORIC HEDGEROWS DURING OPERATIONAL PHASE

7.11.2 It is not anticipated that the operational phase will have any direct physical effects to historic hedgerows within the proposed Order Limits. The effects to historic hedgerows have been avoided during the construction phase through the use of HDD (or other trenchless technique).

INDIRECT EFFECTS UPON HERITAGE SIGNIFICANCE DURING OPERATIONAL PHASE- ONSS

7.11.3 Indirect effects during the operational phase would not occur from the Onshore ECC or associated activities as this will be below ground and areas affected during the construction phase will be returned to their former use. The following section considers potential effects on the heritage significance of assets during the operational phase arising from the continuing presence of the OnSS within their settings. Effects relating to the Offshore WTGs upon the heritage significance of onshore heritage assets are considered separately below in Paragraphs 7.11.37-7.11.66.

JENNINGS FARMHOUSE, GRADE II LISTED BUILDING (1111459)

7.11.4 Jennings Farmhouse is located 250 m from the proposed Order Limits at its closest point and is situated to the east of the proposed OnSS. The farmhouse is Grade II listed and is of high heritage significance. The setting of the farmhouse comprises its domestic garden which makes a positive contribution to its heritage significance. Another residential property lies to the west of Jennings Farmhouse within its setting but this makes a neutral contribution to heritage significance. The wider agricultural surroundings also form part of the setting of the asset and contribute positively to it.

7.11.5 The heritage significance of the asset is drawn from its architectural interest as a 17th century farmhouse with original features. It has some historic interest due to its age but is not known to have been connected to any notable family or architect. Its architectural interest is best appreciated from within its immediate setting, its domestic gardens. This aids the understanding of the asset as a domestic dwelling. The farmhouse no longer has an associated farm and as such the ability to appreciate its original purpose as part of a working farmstead has been diminished. Consequently, the wider agricultural surroundings make a smaller contribution to its heritage significance than they previously would have done.

7.11.6 The OnSS would be situated within the wider surroundings of the asset which contribute to the ways in which the asset is appreciated. Viewpoint 4 (Volume 6, Part 7, Annex 2.2, Figure 2.19a-d) shows the existing wider surroundings of the asset, the proposed OnSS visualisation and the proposed mitigation planting. This shows that the operational OnSS will be perceptible within the surroundings of the asset prior to the mitigation planting becoming fully established. Although following the maturity of the planting, the OnSS will not be visible from Viewpoint 4.

7.11.7 The presence of the OnSS will change the wider setting of the asset by introducing an industrial form into its surroundings. The magnitude of impact is expected to be low negative magnitude, in that the architectural interest of the asset is unchanged and still appreciable. The contribution made by the wider rural setting will be reduced as a result of the erosion of that rural setting represented by the final built form of the OnSS. A low negative effect to the asset of high heritage significance will result in a **minor adverse** effect, which is not significant in EIA terms.

7.11.8 Planting is proposed as part of the Landscape and Visual Impact Assessment which will screen the OnSS, reducing any potential intervisibility between the asset and the OnSS.

BOUNDS FARMHOUSE, GRADE II LISTED BUILDING (1147743)

7.11.9 Bounds Farmhouse is thought to date to the 17th/ 18th century. The proposed Order Limits lie opposite the house on the other side of Hungerdown Lane. The setting of the farmhouse is defined by its isolated position, situated within a domestic garden with agricultural buildings to the north. Beyond this, the house is surrounded by open agricultural fields to its east and south, however nurseries including extensive areas of polytunnels have been constructed immediately to the west and north of the farmhouse, although the polytunnels are not appreciable when experiencing the asset from Hungerdown Lane.

7.11.10 The heritage significance of the asset is drawn from its architectural interest as a farmhouse from at least the 17th century. This is best appreciated from within the immediate surroundings of the asset, that is, from its domestic garden and around the adjacent farmstead. The small rural lane and isolated position also contribute to its setting providing a quiet and rural character to the area. The wider surroundings also contribute although the areas now converted for use as polytunnels make a neutral contribution to heritage significance.

7.11.11 The location for the OnSS would lie 900 m to the south east separated from the asset by agricultural fields and Grange Road. Viewpoint 11 (Volume 6, Part 7, Annex 2.2, Figure 2.25a-b) is located at Bounds Farmhouse on Hungerdown Lane. This shows that the proposed OnSS will be screened by existing mature hedgerows and trees and will not be visible from Bounds Farmhouse.

7.11.12 Whilst the operational OnSS will be an addition to the rural surroundings of the farmhouse at a distance of 900m, its presence is not considered to reduce the contribution that the rural surroundings make to the heritage significance of the asset as the agricultural fields which lie closer and are more likely to have a historical functional association with the farm and will remain unaffected. In addition, the rural surroundings of the asset are not intact through the development of garden nurseries/polytunnels to the west and north of the asset. The appreciation of the architectural and historic interests will not be affected by the OnSS and as such the magnitude of the impact is assessed as negligible. A negligible impact to an asset of high heritage significance will result in a **negligible** effect, which is not significant in EIA terms.

ASH HOUSE, GRADE II LISTED BUILDING (1337154)

7.11.13 Ash House is a large house dating to the 17th/18th century and is situated to the south of Ardleigh Road, 750 m from the proposed operational OnSS. The house is situated at the centre of a long strip of land under the same ownership which runs parallel to the road. The house is surrounded by formal gardens to the south west and east which include a maze, a swimming pool and formal planting. An area of woodland lies at the western extent at the corner of the Ardleigh Road. These elements of its surroundings comprise its immediate setting. Beyond this the gardens are surrounded by agricultural fields.

7.11.14 The asset derives its architectural interest from its surviving 17th/18th century architectural features. This is best appreciated from within its immediate setting, its associated gardens. The formal gardens enhance the appreciation of the architectural interest of the building when seen in tandem, reflecting the style of the building. The historic interest of the building is derived from its status as a large rural house, likely to have been built by a relatively wealthy person at the time. The house is not known to have been connected to any particular person or event and as such its historic interest is relatively limited. The wider agricultural surroundings provide a rural backdrop for the house, there is no known historical or functional association with the land and as such this makes only a small contribution to the heritage significance of the house.

7.11.15 The proposed OnSS will lie 750 m to the west of the asset; the planting within the formal garden and area of woodland at the western corner of the grounds will restrict any visibility to the proposed OnSS. Viewpoints 2 and 4 (Volume 6, Part 7, Annex 2.2, Figures 2-17a-d and 2-19a-d) are taken to the north west and south west of the asset within closer proximity to the OnSS. In the absence of mitigation planting these show intervisibility with the surrounding area particularly from Viewpoint 2. Following the maturity of the planting, the OnSS will not be visible from Viewpoint 2.

7.11.16 As the wider agricultural surroundings are only considered to make small contribution to the significance of the asset, the presence of the operational OnSS is expected to be a negligible effect as this will not affect the architectural interests or the limited historic interests of the asset. A negligible effect to an asset of high heritage significance will result in a **negligible effect** which is not significant in EIA terms.

CHURCH OF ST MARY, GRADE II* LISTED BUILDING (1337175)

7.11.17 Church of St Mary is the parish church of Little Bromley and has its origins in the 12th century. The church is Grade II* listed and is of high heritage significance. The setting and heritage significance of Church of St Mary is described in paragraph 7.10.75-7.10.77.

7.11.18 The indicative operational OnSS, 1.4 km to the north east of the church, will lie within the wider surroundings of the asset. Viewpoint 5 (Volume 6, Part 7, Annex 2.2, Figure 2.20a-d) is taken from Barlon Road located to the south of the church. This shows some partial visibility of the OnSS over a long distance due to a lack of existing screening.

7.11.19 The isolated position of the church is an important aspect of its setting which contributes to its heritage significance. The presence of the indicative OnSS will change the wider surroundings of the asset and may affect the historic interests of the church, through the understanding of the church, constructed as part of Little Bromley Manor, a rural manor away from any settlement. The architectural interests of the building will remain unaffected and this is where much of the significance of the asset is derived. The magnitude of the impact is expected to be low negative upon an asset of high heritage significance resulting in a **minor adverse** effect, which is not significant in EIA terms.

7.11.20 The mitigation planting shown at Viewpoint 5 (Volume 6, Part 7, Annex 2.2, Figure 2.20f) indicates that following its maturity, only the roofs of the taller buildings will be visible from Barlon Road within the surroundings of the asset, reducing the effects over time.

CROPMARK SITE SOUTH OF ARDLEIGH, SCHEDULED MONUMENT (1002146)

7.11.21 A full narrative assessment of the cropmark site south of Ardleigh is provided within Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note- Onshore Project Area. A summary of the key points is presented below to provide context for the assessment of effects.

7.11.22 The scheduled monument lies 1.5km to the west of the proposed OnSS and consists entirely of below ground archaeological remains with no surface expression. The monument covers a large area divided by Frating Road, currently used for agricultural purposes. The monument consists of a dense concentration of archaeological features including ring ditches, enclosures, trackways and field systems. The Site was initially discovered through a combination of chance finds through ploughing, excavations by the farmer and subsequent aerial photo analysis. Small scale excavation between 1950 and 1970 revealed an enclosed early-middle Iron Age round house, burials and a ritual pit, roman kilns and a well. Further excavations in 1979-80 uncovered a further 18 ring ditches, ditched trackways, enclosures and Saxon graves. The monument derives its high heritage significance from its archaeological interest, through the discovery of multi-period archaeological remains ranging from the early Bronze Age to Roman period with evidence from the Saxon period.

7.11.23 The monument is not considered to hold any architectural or artistic interest. The monument consists of entirely below ground archaeological remains with no surface expression and is set within an agricultural landscape which comprises its setting. The surrounding fieldscape is of irregular enclosures with moderate boundary loss since the 1950s.The boundaries of the monument are not physically defined and within the fields and as the monument is entirely below ground, the archaeological interest of the monument cannot be appreciated or experienced from within the surroundings of the asset. To be able to appreciate the rarity, complexity, survival and completeness of the monument, and any associated sites within the wider landscape, prior knowledge/research is required. This detail is not something that can be appreciated or experienced from within the surroundings of the asset (the definition of setting).

7.11.24 The monument is not considered to derive its heritage significance from any designed or incidental views towards or from the surrounding landscape. A visualisation has been prepared for the VE OnSS from Frating Road (Volume 6, Part 6, Annex 7.10, Figure 7.19a-c) which shows that there will be no visibility between the monument and the proposed OnSS due to intervening mature trees. The contribution of setting to the significance of the asset is limited to the appreciation of other contemporary sites within the landscape. The introduction of the OnSS at 1.5km distance into the wider landscape surrounding the monument is not considered to affect the ways in which the archaeological interest of the monument is understood. Views towards or from the monument to the east are not considered to be key to understanding the importance of the asset and as such any visibility (although this is likely to be none based on the visualisation) between the monument and OnSS would not harm the ability to appreciate the archaeological interest of the monument which makes up its significance and as such there is no mechanism for harm to the monument to occur.

7.11.25 As such the magnitude of impact is considered to be negligible upon an asset of high heritage significance resulting in a **negligible** effect which is not significant in EIA terms.

LITTLE BROMLEY HENGE (NON-DESIGNATED ASSET)

7.11.26 A full narrative assessment of the Little Bromley Henge is provided within Volume 6, Part 6, Annex 7.6: Onshore Cultural Heritage, GPA3 Exercise and Technical Note-Onshore Project Area (Section 4.3). A summary of the key points is presented below to provide context for the assessment of effects.

7.11.27 Little Bromley Henge is a non-designated heritage asset that has been put forward for scheduling as a scheduled monument. The monument is considered to be of high heritage significance and as such is treated the same as a designated heritage asset. The monument is located 1.5km to the south east of the OnSS area. The part of the field which contains the monument is currently retained as a meadow however the surrounding fields and remainder of the field which contains the monument are agricultural. Aerial photographs show that the whole field has been subject to ploughing in the past.

7.11.28 Little Bromley Henge is situated within an agricultural landscape. To the north east of the monument is Barlon Road which leads towards St Mary's Church, Little Bromley. On all other sides the monument is surrounded by agricultural fields and Badley Hall Farm located further south. To the south west of the monument is a brook which divides the parishes of Little Bromley and Great Bromley. Henge monuments are commonly situated within low lying river valleys close to water which may have had symbolic meaning.

7.11.29 The monument derives its significance from its archaeological interest through the information that it can tell us about past human lives and activities. The monument has not been intrusively investigated to date so its date is unconfirmed however it has been studied from aerial photographs since at least the 1960s. In general, henge monuments are rare in the south east of England, and its rarity in the region adds to its significance. The survival of the monument below ground and the survival of potentially associated features enhances the completeness of the prehistoric archaeological landscape and this adds to the significance of the monument.

7.11.30 The monument is currently situated within a relatively recent post-medieval to modern agricultural landscape. The monument exists entirely below ground with no above ground surface expression. The definition of setting is 'the surroundings in which the monument is experienced', with no surface expression or on site interpretation, it is difficult to experience the monument within its surroundings without prior knowledge or research into its form and location, no can its relationship with other surrounding monuments be appreciated from within its setting.

7.11.31 The OnSS will lie 1.5km to the north east of the henge monument. The surroundings of the monument are considered to make a minimal contribution to the ways in which the asset is appreciated and understood. A visualisation has been prepared for the VE OnSS from Little Bromley Henge (Volume 6, Part 6, Annex 7.10 Figure 7.20a-c) which shows that there will be no visibility between the monument and the proposed OnSS due to intervening mature trees and hedgerow. The best way to appreciate the henge is through detailed study of aerial photographs to understand the monument itself and the possibly associated (contemporary or later) barrow cemeteries nearby. Due to a lack of surface expression these assets cannot be readily appreciated on the ground within the post-medieval to modern landscape. As such the introduction of the OnSS at a distance of 1.5km is not considered to affect the archaeological interest of monument which makes up its significance. In addition, archaeological evaluation of the OnSS area has not identified any archaeological features of similar date or form that could be related that would be affected by the proposals.

7.11.32 As such the magnitude of impact is considered to be negligible upon an asset of high heritage significance resulting in a **negligible** effect which is not significant in EIA terms.

HISTORIC LANDSCAPE CHARACTER

7.11.33 The Essex Historic Landscape Characterisation has characterised the OnSS area simply as 'Boundary Loss' as being as a result of changes to agricultural practices in the 20th century. These fields represent widespread removal of internal field boundaries to make way for larger agricultural machinery in the 20th century. Whilst the remaining boundaries will date to earlier enclosure, the removal of the internal divisions affect the time depth and legibility of the earlier enclosure in the current landscape.

7.11.34 The detailed characterisation carried out for the Tendring District characterises the area for the proposed OnSS.

7.11.35 The OnSS area is divided through the middle with the northern section part of Historic Environment Characterisation Zone 13.2 (Essex County Council & Tendring District Council 2008) characterised as a mixture of later enclosure by agreement and irregular fields of ancient origin. Post 1950s boundary loss has been moderate and the settlement pattern survives well within the landscape. The southern section is within zone 12.3 characterised as fieldscape of largely of ancient origin and irregular, but with moderate loss of field boundaries since the 1950s.The Tendring District Characterisation goes on to describe the archaeological character of these character areas and the scoring system applied within the Tendring Characterisation document for these character zones (12.3 and 13.2) predominantly relates to the archaeological elements of these areas. Whilst these character types score highly on the defined criteria, this is through the contributions made by the below ground archaeological elements which cannot be appreciated above ground. As the effects to the archaeological resource are assessed in Section 7.10, the section assesses the visible elements of the historic landscape character and how former landscapes are read within the current landscape. The heritage significance of the historic landscape character is considered to be low.

7.11.36 The presence of the OnSS within this landscape will result in a change to the historic landscape character type within the proposed Order Limits from agricultural to industrial. The Essex Broad characterisation type ('boundary loss') is common across Essex (26% of the county) and the heritage significance of these characters is considered to be of low heritage significance. This change within the proposed Order Limits is considered to have a negligible impact to this character type overall. This would result in a **negligible effect** to the historic landscape character type which is not significant in EIA terms.

INDIRECT EFFECTS UPON HERITAGE SIGNIFICANCE DURING OPERATIONAL PHASE-OFFSHORE ARRAY

7.11.37 A number of heritage assets have been assessed where their heritage significance could be affected through development of the VE WTGs within their settings. The selection of assets is based on consultee responses to scoping and later engagement, as well on the basis of a scoping exercise undertaken in accordance with the GPA3 methodology set out in Historic England Guidance (Historic England 2017). This initial scoping exercise determined which of these assets would be subject to assessment and is reported in Volume 6, Part 6, Annex 7.5: GPA3 Exercise and Technical Note (Offshore Array). Further assessment of selected sites is reported below, this uses the final built and operational form of the wind farm, as this represents the worst case scenario. It is considered that, due to distance from the coast, construction works will have limited visibility, and given their temporary nature, are not anticipated to cause any likely significant effects.

NORTH LOOKOUT, ALDEBURGH, GRADE II LISTED (1269771)

7.11.38 The North Lookout dates to 1850 and was built as a pilot station with a single storey lifeboat station added in the 20th century. Both the north and south lookout's (south lookout considered separately below) were built as commercial enterprises either to rescue or plunder ships that fell into difficulty on the treacherous Essex coast. Located only 200 m apart the towers were in competition with each other. Other lookout towers were situated along this coastline but the two at Aldeburgh are the last surviving examples. The North Lookout is a four-storey square tower with decorative yellow and red brickwork and a pyramidal roof. The single-story coastguard station is white rendered with a grey slate roof.

7.11.39 The seafront setting of the North Lookout Tower is important to the asset as its primary function was to be able to see ships in distress as they navigated the waters of the east coast. The commercial aspect relied on this visibility out to sea and being able to respond quickly. The height of the building and its position at the sea front enabled this visibility.

7.11.40 The heritage significance of the asset is derived from its architectural interest, as a rare survival of a building of this type. Interestingly, its architectural form is very different from the south lookout tower adding to its distinctiveness. The building has survived well after being taken over in the 20th century by the RNLI and added to by the extension at ground level. The retention of the function of the tower as a lookout adds to its heritage significance. The architectural interest of the asset is best appreciated in its immediate surroundings along the promenade at Aldeburgh. It also has some group value with the south lookout in terms of history and function, even though they are distinct from one another in form. The asset has historic interest as it relates to the history of Aldeburgh as a thriving fishing village as the lookouts needed to be staffed by pilots with local knowledge who were familiar with the waters which surrounded the Aldeburgh coast. The immediate setting enhances the historic interest of the asset through the understanding of the tower to the local community and historic fishing village. The wider coastal setting with extensive coastal and maritime views enhance the historic interest as it relates to the primary function of the tower.

7.11.41 The proposed VE WTGs will lie at a considerable distance from the lookout tower at a distance of approximately 41 km. The northern extent of the existing arrays at Galloper and Greater Gabbard Windfarms at a distance of 30 km are only very faintly visible in clear conditions when looking south east. The northern VE WTGs could be very faintly visible in clear conditions at distance, in the gap between the East Anglia 2 (consented but not yet constructed and Galloper and Greater Gabbard WTGs in clear conditions, as shown on the wireline for VP6 (Volume 6, Part 7, Annex 10.3: SLVIA Figures and Photomontages, Viewpoint 6). The layout of the WTG's is such that these have been set back from this northern boundary, with fewer WTGs in the northern extent of the array area. The remainder of the array will be sited behind the existing Galloper and Greater Gabbard array albeit at an increased height so may be visible above/behind the existing array.

7.11.42 The introduction of the VE WTGs within the wider coastal setting and views out to sea from the North Lookout will be an addition to this view within which existing WTGs are already faintly visible. The VE WTGs will not affect the ways in which the architectural interests are appreciated from the immediate setting, as the immediate setting of the asset will not be changed. The historic interests of the asset will also be preserved.

7.11.43 The view out to sea is important to the asset historically and currently however, the presence of WTGs within this view will not affect the understanding of the asset as a lookout post as these views will still be available. The effect is considered to be of negligible magnitude as the introduction of the WTGs will not impact upon the availability of this view which is what contributes most in terms of its setting. A negligible magnitude of impact upon an asset of high heritage significance would result in a **negligible** effect to the heritage significance overall. This effect is not significant in EIA terms and as such a no mitigation is proposed or considered necessary.

SOUTH LOOKOUT, ALDEBURGH, GRADE II LISTED (1269772)

7.11.44 The south lookout at Aldeburgh was built in the mid 19th century and is a three storey tower with rendered and colourwashed brick exterior. The southern side the tower has an iron spiral staircase on the outside with a door at the top floor. On the eastern face (towards the sea) is a cantilevered viewing gallery. The tower has a pyramidal roof and a single storey building at the ground floor. The use of the tower as a lookout ceased in 1989 and after a period of disuse has been converted into an art gallery.

7.11.45 The seafront setting of the south lookout tower is important to the asset as its primary function was to be able to see ships in distress as they navigated the waters of the east coast. The visibility out to sea was critical to being able to respond quickly. The height of the building and its position at the sea front enabled this visibility.

7.11.46 The asset draws its heritage significance from its architectural interest provided by its unusual form particularly with the cantilevered viewing platform and external staircase and rendered exterior which differentiate this from the northern tower. The tower is a rare survival of this type which adds to its interest and also has some group value with the northern tower. The architectural interest is best appreciated from the immediate surroundings of the asset from the promenade. The historic interest of the asset stems from its association with the historic village and the rescue missions launched from here. The lookouts needed to be staffed by pilots with local knowledge who were familiar with the waters which surrounded the Aldeburgh coast adding to the historic interest. The immediate setting enhances the historic interest of the asset through the understanding of the tower to the local community and historic fishing village. The wider coastal setting and views out to see enhance the historic interest as it relates to the primary function of the tower. The southern tower also has historic interest from its use by local writer Sir Laurens van de Post who used the middle room to write about his adventures in Africa from the mid 1950s onwards.

7.11.47 The proposed VE WTGs will lie at a considerable distance from the lookout tower at a distance of approximately 41 km. The northern extent of the existing arrays at Galloper and Greater Gabbard Windfarms are only very faintly visible in clear conditions due to a distance of 30 km when looking south east. The northern VE WTGs could be very faintly visible in clear conditions at distance, in the gap between the East Anglia TWO (consented but not yet constructed) and Galloper and Greater Gabbard WTGs in clear conditions, as shown on the wireline for VP6 (Volume 6, Part 7, Annex 10.3: SLVIA Figures and Photomontages). The remainder of the array will sit behind the existing Galloper and Greater Gabbard array albeit at an increased height so may be visible above/behind the existing array. The layout of the WTGs has been designed so that fewer WTGs are positioned within the northern extent of the array area and are set back from its northern boundary.

7.11.48 The introduction of the WTGs within the wider coastal setting and views out to sea from the South Lookout will be an addition to this view within which existing WTGs are already visible. The VE WTGs will not affect the ways in which the architectural interests are appreciated from the immediate setting. As the building is now used as an art gallery, the views out to sea, whilst they may provide some artistic inspiration, play less of a role in the understanding of the asset as a lookout post as this is not as readily appreciable as it once was. Through the change of use of the building the historic interest is not as easily appreciated and as such the sea view makes less of a contribution to its historic interest. In addition, the availability of this historically important sea view will be preserved and can still be appreciated. As the addition of the VE WTGs will not affect the architectural interest, where this asset draws most of its heritage significance, the effect is considered to be of negligible magnitude upon an asset of high heritage significance resulting in a **negligible** effect. This effect is not significant in EIA terms and as such a no mitigation is proposed or considered necessary.

MARTELLO TOWER, ALDEBURGH, SCHEDULED MONUMENT (1006041) AND GRADE II* LISTED (1269724)

7.11.49 The Martello Tower at Aldeburgh is the northernmost tower of the group of Martello towers constructed along the east coast between St Osyth in the south and Aldeburgh in the north. The tower is unique in being quatrefoil, consisting of four of the usual east coast towers merged into one. It has been suggested that this position may have originally been proposed for the site of a redoubt but that this was abandoned due to the costs involved. The tower was built to support a battery of five guns and access was (and still is) provided by the first floor. The property has been converted into a holiday rental.

7.11.50 The tower lies away from the village at Aldeburgh situated 1.1 km to the south, on a spit of land between the sea to the east and the Home Reach of the River Alde to the west. The tower lies in an isolated position at the end of a track with no other structures nearby making this standout within an otherwise relatively low lying coastal/estuarine environment. The position of the tower at the thinnest point along the coastal spit, with the sea on one side and the river on the other, furthers the isolation of the structure.

7.11.51 The tower is significant for its military architecture and is Grade II* listed for its unusual quatrefoil form. The tower has survived well, although erosion has damaged the seaward side of the moat and glacis wall. Internal alterations will have taken place to convert the building to a holiday rental. The architectural interests are best experienced from the immediate surroundings of the tower, where its size and the strength of the structure can be best appreciated. The historic interest of the asset lies in its purpose as part of a series of small coastal artillery forts to counter the threat of invasion posed by Napoleon in the early 19th century. The towers were built along the east coast and the south coast and only 18 of the original 29 are known to survive and as such these are considered to be rare structure. The towers have group value with one another being built around the same time as part of a defensive response to a specific threat. The towers link forts, redoubts and other coastal batteries and were constructed as a key part of the defence of Britain. Seaward views would have been key to the defensive purpose of the tower in identifying an approaching enemy fleet and as such the views out to sea from the tower aid the appreciation of the historic interests of the tower.

7.11.52 The VE array area is proposed approximately 38 km from the Martello Tower at its closest point. A visualisation has been prepared from Aldeburgh (Volume 6, Part 7, Annex 10.3: SLVIA Figures and Photomontages, VP6) and an additional wireline has been prepared from the height of the gun platform of the Slaughden Martello Tower specifically to show how the increase in height would affect the visibility of the WTGs at this location (Volume 6, Part 6, Annex 7.10, Figure 7.15a-d)The wirelines indicate that the existing northern extents of the Greater Gabbard and Galloper WTGs are faintly visible in clear conditions. It is possible that the northern extent of the VE WTGs will be visible in the gap between the existing arrays and the consented East Anglia 2, with the remainder of the WTGs seen behind Galloper and Greater Gabbard. VP6 and the additional wireline in Figure 7.15 (Annex 7.10) show the extent to which the VE WTGs will be seen in the context of the existing (Greater Gabbard and Galloper) and consented (East Anglia 2) WTGs (Volume 6, Part 7, Annex 10.3: SLVIA Figures and Photomontages, VP 6).

7.11.53 The proposed array will introduce additional WTGs into views from the tower at distance. Due to the distances involved the WTGs will not compete with the structure in terms of its size or sense of isolation. Distant views of the WTGs in conjunction with the tower will not affect the appreciation of the military design of the structure. Although the structure does have group value with the other Martello towers along this coast, the tower at Aldeburgh is set apart from the rest at a distance of 15 km to the next closest example and as such the proposed WTGs will not affect the relationship between the tower and the other examples located further south. As the asset is of the highest sensitivity the introduction of the array will be an addition to a view that contributes to the historic interest of the asset in the positioning of the tower at this location for defensive purposes. Importantly, the presence of the WTGs in long distance views will not affect the availability of this view which is how the military use of the tower is best understood. In addition, the ability to understand its defensive location, its relationship along the coast to other contemporary defensive structures and continuing ability to have long distance views out to sea will not be affected. The ability to appreciate the architectural arrangement of the tower in terms of defense and its strategic location will not be affected by the WTGs, even where these may be visible in distant views. As such an effect of low negative magnitude is assessed to an asset of high heritage significance resulting in a **negligible** effect. This effect is not significant and as such no mitigation is proposed or considered necessary.

ORFORD CASTLE, ORFORD, SCHEDULED MONUMENT (1014860) AND GRADE I LISTED (1030873)

7.11.54 Orford castle is a tower keep castle built as a fortified residence. This type of castle is rare nationally and only five medieval castles are known from Norfolk and Suffolk. Orford Castle is thought to be one of the earliest polygonal tower keeps in Britain originally constructed in the later part of the 12th century. The keep is of three stories and rises to a height of 27 m. At the top of the south eastern turret is a reinforced concrete structure thought to have been installed as a WWII lookout post.

7.11.55 The setting of the castle consists of its position adjacent to the River Ore, the coastal marshes and the sea beyond this. The tower allows views over both the river and the sea which would have been important for defensive purposes. The immediate surroundings comprise the earthworks associated with the castle and the later village beyond this. The setting of the asset contributes to these interests by providing views out to sea which would warn of an approaching enemy fleet. The dominance of the castle within the local landscape illustrates its original function which was symbolic as well as military and administrative.

7.11.56 The castle derives its heritage significance from its architectural interest as a well preserved example of a polygonal tower keep with few later alterations. This is thought to be one of the earliest polygonal towers of a type of castle that is rare nationally; both of these factors add to its architectural interest. The survival of the internal and external features of the castle aids the understanding of the way of life for the inhabitants of the castle. It is from within the immediate setting of the asset, from within and surrounding the castle that its architectural interests can be best appreciated. Its wider surroundings allow the dominance of the castle within the local landscape to be appreciated, exemplified by the shape and height of the tower. The light colour of the brickwork also helps the tower to stand out within the landscape.

7.11.57 The castle has historic interest as it was built during the reign of Henry II between 1165-73. This type of royal castle was usually held by a local constable appointed by the crown to uphold the King's authority locally. The castle also served as a coastal defense when Orford was a flourishing harbour town in the medieval period. The castle remained a centre of military and administrative power in the 12th and 13th centuries but started to decline in importance in 14th century. Historical documents detailing the construction of the castle, the costs and inhabitants of the castle and their connections to events in history survive, which add to the historic interests of the castle. The castle can be appreciated from the setting of the asset, particularly the relationship between the village and the castle being the administrative centre. The power of the King and the local administration is reinforced by the dominance of the tower over the village. The original purpose of the castle from a military perspective was to quash local rebellion in 1173, later to defend the harbour at Orford and finally it was used as a lookout post during WWII. Views towards the wider surroundings both out to sea and inland would have been important to observing an approaching enemy by sea or by land.

7.11.58 The castle has some archaeological interest provided by its surrounding extant earthworks comprising two enclosing defensive ditches with bank and a smaller counterscarp bank beyond. Evidence for walls and towers which would have surrounded the keep are likely to exist below ground as well as a quarry used to provide the stone to build the castle in the 12th century.

7.11.59 Orford Castle lies 41 km from the array area at its closest point and geographically it sits opposite the gap between the East Anglia 2 array (consented) and the Greater Gabbard and Galloper arrays (operational). As such the northern extent of the VE array could be visible within this gap in the clearest conditions. VP7 was taken from the parapet of Orford Castle overlooking the river, coastal marshes and out to sea and the existing WTGs can be seen to be very faintly visible on the horizon (Volume 6, Part 7, Annex 10.3, SLVIA Figures and Photomontages, Viewpoint 7). The layout of the array is such that the WTGs are set back from the northern extent of the array area, with fewer WTGs within the northern part of this area, reducing the potential visibility from the north west.

7.11.60 Both the immediate and wider setting of the asset are considered to contribute to its heritage significance. The presence of the WTGs within the wider seascape is not considered to affect the ways in which the architectural interests of the castle are appreciated as distant views of the WTGs will not prevent the appreciation of the design of the castle nor will the WTGs compete with the dominance of the structure in the landscape due to distance. The ability to appreciate the architectural arrangement of the castle in terms of defense and habitability, as well as its strategic location will not be affected by the WTGs, even where these may be visible in distant views. The archaeological interest will not be affected by the proposed WTGs. Additionally, the historic interest will also be preserved. The understanding of the role of the castle in administration to the village and the appreciation of the structure as a royal castle will not be affected. The elements of historic interest that rely on views out to sea such as the protection of the harbour in the medieval period and the WWII lookout post, will introduce additional WTGs into this view at a distance of 41 km, although the presence of the WTGs will not interrupt or obscure any views but will be an addition to it.

7.11.61 Orford Castle is of high heritage significance and the magnitude of the impact arising from the presence of the WTGs and effect that this could have on the appreciation of that single element of the historic interest of the castle is considered to be negligible. This would result in a **negligible** effect which is not significant in EIA terms.

NAZE TOWER, WALTON, GRADE II* LISTED (1165846)

7.11.62 The tower was built as a navigation mark for ships travelling in and out of the port of Harwich in 1720. The tower has eight floors and is just over 26 m tall and lies to the north of Walton, on the Naze, a headland which projects into the north sea. During the threat of Napoleonic invasion, it was used as a lookout post and beacon. It was later used by the Royal Navy to practice manoeuvres out at sea using signaling flags. In WWI it was used as a lookout post over the Orwell estuary with sentry boxes added on two elevations and later became a radar tower during WWII with operators stationed within the tower and a chain home radar dish positioned on the roof. In the second part of the 20th century the tower has been used for communications by the American airforce in the cold war and later the police, port authority and coastguard.

7.11.63 The setting of the asset comprises its immediate surroundings within a relatively isolated position upon the headland with the seaside resort located further south. It is situated at the clifftop surrounded by a grassed area used as a picnic area. Its wider setting consists of its coastal position as a navigation point and wider sea views in particular to the port of Harwich located 7 km to the north which was a consideration in its original design and function. The tower is a prominent feature within the landscape, which is enhanced by its position on the highest point in this landscape and also by the projection of the headland into the sea and can be seen as far north as Felixstowe.

7.11.64 The Naze Tower has architectural interest as a well preserved example of a navigation tower dating from the early 18th century. It is octagonal in shape and constructed from a plum colour brick with three reducing stages. The architectural interest is best appreciated from within its immediate surroundings. The relative isolation of the tower means that views towards the tower from the immediate surroundings are uninterrupted and can be viewed either close up or from a distance within the nature reserve that surrounds it to put it into its coastal context. The historic interests of the asset are derived from the many uses that it has had since 1720, most of which have involved its use for navigation to guide ships around the headland itself but also as a marker for ships heading to the ports at Harwich and Felixstowe. Views from the sea towards the asset contribute to this part of its historic interest. The tower has been used as a lookout post on several occasions throughout its history for defensive purposes. Views from the asset looking out to sea would have been a key element in the defence of this part of the coastline. For both of these reasons the seascape is considered to contribute to the appreciation of the historic interests as a navigation point and as a defensive lookout post.

7.11.65 Geographically Naze Tower is situated opposite the gap between the two VE array areas, at a distance of 53 km at its closest point. The wireline from the height of the top of the Naze Tower (Volume 6, Part 6, Annex 7.10, Figure 7.16) and the viewpoint from the naze clifftop (Annex 10.3, VP12) shows that some of the WTGs will be positioned within this gap with the remainder being seen behind the existing arrays at Galloper and Greater Gabbard. The additional wireline from the top of the Naze Tower shows slightly more of the base of the WTG could be visible from this height. However due to the distance of 53 km between the Naze Tower and the existing arrays the WTGs were not visible either during the site visit nor upon the baseline photograph of Viewpoint 12(Volume 6, Part 7, Annex 10.3: SLVIA Figures and Photomontages, Viewpoint 12).

7.11.66 The proposed WTGs positioned within the wider setting will not affect the appreciation of the octagonal design and height of the tower nor will they compete with the visual prominence of the tower in this landscape. As such the architectural interests of the tower will remain intact. The understanding of part of the historic interests relies on the wider surroundings and relationship between the asset and the sea faring vessels. The proposed WTGs will not interrupt or obscure any key views out to sea, nor affect the availability of these views. Modern sea faring vessels will still be visible within views out to sea and, at times, are exceptionally prominent due to their size, colour and movement within that view. The existing WTGs lie closer to the coast than the proposed (although the proposed WTGs will be larger in scale) and these are not readily perceptible from the tower, as such the proposed WTGs are not considered to affect the understanding of the historic interests nor the heritage significance overall. The effect is assessed as being of negligible magnitude upon an asset of high heritage significance. This would result in a **negligible** effect which is not significant in EIA terms.

7.12 ENVIRONMENTAL ASSESSMENT: DECOMMISSIONING

ONSHORE ECC AND ONSS

DISTURBANCE TO ARCHAEOLOGICAL ASSETS DURING DECOMMISSIONING

7.12.1 For the purposes of the MDS for the ES Chapter it is assumed that all infrastructure will be completely removed as part of the decommissioning. It is not anticipated that the below ground effects of the decommissioning phase will extend beyond the footprint of the area required during the construction phase. As such there are not expected to be any additional effects to below ground archaeological remains as a result of the removal of the export cables and landfall infrastructure. No negative direct effects are anticipated during the decommissioning phase as any intrusive works will be restricted to areas which have already been disturbed during the construction phase. No mitigation is proposed or considered necessary.

DIRECT EFFECTS TO HISTORIC HEDGEROWS DURING DECOMMISSIONING

7.12.2 There are not anticipated to be any effects to historic hedgerows during decommissioning as the hedgerows will have been crossed using HDD (or other trenchless technique) with the cables pulled through the ducts beneath the hedgerows. It is assumed that the same will apply in reverse during the decommissioning and as such no impacts to the hedgerows will occur during this phase.

INDIRECT EFFECTS UPON HERITAGE SIGNIFICANCE DURING DECOMMISSIONING OF ONSHORE INFRASTRUCTURE

7.12.3 Indirect impacts during the decommissioning phase could arise from activities such as construction traffic, flashing lights on moving vehicles, noise and dust created by activities associated with the removal of the export cable (ducts to be left in situ) and demolition of the OnSS. These impacts are expected to be temporary and short term only lasting only for the decommissioning programme and are not considered to give rise to any significant indirect effect.

7.12.4 The decommissioning and demolition of the OnSS would restore the setting of onshore heritage assets (assuming all other factors remain the same) as visually intrusive elements of the scheme would be removed. No mitigation is proposed or considered necessary.

OFFSHORE ARRAY

INDIRECT EFFECTS UPON HERITAGE SIGNIFICANCE DURING DECOMMISSIONING OF OFFSHORE ARRAY

7.12.5 The decommissioning of the array and the removal of the WTGs would have the effect of reversing any impacts upon heritage significance identified as arising from the presence of the WTGs during operation (assuming no other effects have taken place in the interim). No negative effect on the settings and hence heritage significance of any heritage assets is predicted to occur from decommissioning. No mitigation is proposed or considered necessary.

7.13 ENVIRONMENTAL ASSESSMENT: CUMULATIVE EFFECTS

7.13.1 The cumulative effects assessment as set out in this chapter has been undertaken in accordance with the methodology provided in Volume 1, Annex 3.1: Cumulative Effects Assessment Methodology.

7.13.2 The projects and plans selected as relevant to the assessment of impacts to onshore archaeology and cultural heritage are based upon an initial screening exercise undertaken on a long list. Each project, plan or activity has been considered and scoped in or out on the basis of effect–receptor pathway, data confidence and the temporal and spatial scales involved. For the purposes of assessing the impact of the VE on onshore archaeology and cultural heritage in the region, the cumulative effect assessment technical note submitted through the EIA Evidence Plan and forming Technical Annex 1.3.1 of this ES screened in a number of projects and plans as presented in Table 7.10.

7.13.3 In assessing the potential cumulative impacts for VE, it is important to bear in mind that projects, predominantly currently ‘proposed’ may or may not be, ultimately taken forward for development. To build in some consideration of certainty (or uncertainty) the projects and plans were allocated into ‘Tiers’ reflecting their current status within the planning and development process. They are outlined here in Table 7.9.

Table 7.9: Description of Tiers of other developments considered for cumulative effect assessment.

Tiers	Development Stage
Tier 1	Projects under construction.
	Permitted applications, whether under the Planning Act 2008 or other regimes, but not yet implemented.
	Submitted applications, whether under the Planning Act 2008 or other regimes, but not yet determined.
Tier 2	Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has been submitted.
	Projects under the Planning Act 2008 where a PEIR has been submitted for consultation.
Tier 3	Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has not been submitted.
	Identified in the relevant Development Plan (and emerging Development Plans with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/ approvals, where such development is reasonably likely to come forward.

Table 7.10: Projects considered within the Onshore Archaeology and Cultural Heritage cumulative effect assessment.

Development type	Project	Status	Data confidence assessment/ phase	Tier
Offshore Wind Farm	North Falls	Pre-consent	High- application to be submitted in 2024	Tier 2
Offshore Wind Farm	East Anglia ONE North	Approved	High	Tier 1
Offshore Wind Farm	East Anglia TWO	Approved	High	Tier 1
Electricity Transmission	East Anglia Green Connection Node	Pre-consent	High- application to be submitted in 2024	Tier 2
21/02070FUL Battery Energy Storage System	Construction and Operation of a 50 MW Battery	Approved	Medium	Tier 1

Development type	Project	Status	Data confidence assessment/ phase	Tier
	Energy Storage System			
21/00393/EIA Scoping for Solar array	Proposed solar energy scheme	Pre-consent	Medium	Tier 2
22/01047/FUL Industrial units	Proposed industrial units, access and landscaping	Approved	Medium	Tier 2
21/01058 Utilities	Removal of OHPL burying cable underground	Approved	Medium	Tier 1
21/02027 Residential	Retirement housing	Awaiting decision	Medium	Tier 2
20/00179 Residential	50 Residential dwellings	Approved	Medium	Tier 1
18/01244 Residential	10 Apartments, parking and landscaping	Approved	Medium	Tier 1
17/01988 Residential	Retirement housing	Approved	Medium	Tier 1
20/01130 Residential	122 residential dwelling	Awaiting decision	Medium	Tier 2
22/01042/ DETAIL Commercial	8 commercial units with access and landscaping	Approved	Medium	Tier 1

7.13.4 Table 7.11 presents the scenarios whereby VE and the other projects listed in Table 7.10 could potentially result in cumulative direct effects.

7.13.5 In order for VE to connect to the National Grid, the proposed National Grid Norwich to Tilbury Reinforcement Project and the associated EACN substation must be operational. National Grid has defined a construction and operational zone within which their EACN substation will be situated. This is adjacent to the VE OnSS zone.

7.13.6 Despite its stage in the planning process., due to VE's reliance on this project for its connection to the National Grid, it has been given detailed consideration and treated with more certainty than other projects at similar stage in the planning process in the CEA. To assist with the assessment, it has been necessary to make assumptions as to the siting, scale, form and construction of the project, particularly the EACN substation. These assumptions have been checked and agreed to be appropriate and reasonable by National Grid. For the purposes of the cumulative assessment of VE and National Grid Norwich to Tilbury Project, the worst case delivery scenario, with limited co-ordination has been assessed for the direct and indirect impacts.

Table 7.11: Cumulative MDS.

Impact	Scenario	Justification
Direct effects on heritage assets	Assess committed development that would impact discrete heritage assets or groups of heritage assets that would also be affected during the construction phase of VE	Disturbance of heritage assets or groups of heritage assets by other development would present an increased magnitude of change
Indirect effects on setting and views to/of designated heritage assets, causing a reduction in the contribution of setting to the heritage significance of heritage assets	Assess committed development that would impact on the settings and views to/from selected designated and non-designated heritage assets during the construction, operation and decommissioning phases of VE	Construction and operation of other development alongside VE may result in cumulative effects on the settings and views to/from the heritage assets and represent a worst-case

CO-ORDINATION WITH NORTH FALLS OFFSHORE WIND FARM

7.13.7 In accordance with the provisions of NPS EN-5 to seek to develop co-ordination solutions for onshore grid connections, VE has been working with North Falls on a co-ordinated solution to reduce the overall environmental and community impacts of the proposals. The project includes almost fully overlapping or combined Onshore ECCs and a co-located site for the OnSS to the west of Little Bromley. It is proposed the two projects' ducts will be installed adjacent to each other within the corridor. The level of co-ordination between the two projects has led to a higher degree of understanding and interactions with the North Falls proposals that can be used within the CEA than would be normal for other developments at a similar stage in the planning process.

7.13.8 Due to the independent timescales for each project, three delivery scenarios have been developed (details of each scenario can be found within Volume 3, Chapter 1: Onshore Project Description). For the purposes of the cumulative assessment of VE and North Falls, the worst case delivery scenario, with limited co-ordination has been assessed for the direct and indirect impacts.

CUMULATIVE DIRECT EFFECTS

ONSHORE ECC AND ONSS

7.13.9 For the assessment of cumulative direct effects arising from the Onshore ECC, all three delivery scenarios (Volume 9, Report 30: Delivery Scenarios Document) will be very similar in respect of the cumulative effects of North Falls and VE, as the same amount of below ground works will be required for the installation of the cable for each. Delivery scenario 3 with the projects undertaken more than three years apart, would require a slightly different haul road route and re-establishment of TCC areas. It is possible that these activities for Project 2, could have below ground impacts outside of those required for Project 1. As such delivery scenario 3 is considered to be a worst case for direct effects.

7.13.10 The North Falls OWF Onshore ECC will follow the same alignment as the VE OWF. The installation of the ducting works for both projects are assessed as the standalone VE project above. Therefore it is considered that undertaking the installation of ducting independently would not give rise to any additional cumulative effects. However through delivery scenario 3 there is potential for the haul roads and TCC's to be reinstated for the second project at a later date for cable installation. This has the potential for direct effects on the same types or related archaeological deposits as those affected by Project 1. The cumulative effects if the additional activities required for delivery scenario 3 would have a high negative magnitude of impact to assets of low to medium heritage significance. This would result in a moderate to minor adverse effect prior to mitigation. Following the implementation of an approved programme of archaeological mitigation through preservation by record or preservation in situ, a minor adverse or negligible effect is assessed.

7.13.11 The OnSS for both projects (VE and North Falls OWF) will be co-located within the OnSS area, areas for the OnSS footprint, working areas/compounds and access have been designed, VE will be the western of the two proposed substations. For the purposes of the cumulative assessment, two substations located within the same area have the potential to have direct effects on the same types of deposits or related deposits within their footprint and construction areas. The cumulative effects of the North Falls OnSS will have a high negative magnitude of impact to assets of low to medium heritage significance. This would result in a moderate to minor adverse effect prior to mitigation. Following the implementation of an approved programme of mitigation through preservation by record or preservation in situ, a minor adverse or negligible effect to buried archaeological remains is assessed.

7.13.12 In addition, the proposed search area for the EACN Substation lies within the proposed Order Limits to ensure that cabling to connect the VE OnSS to the EACN substation can take place as part of the DCO. The EACN substation will be located to the west of Grange Road. Construction activities associated with the EACN substation has the potential to have direct effects on the same types or related archaeological deposits as those located within the VE OnSS area and the Onshore ECC as it connects to the EACN substation. The cumulative effect of the EACN Substation in combination with the VE OnSS will have a high negative magnitude of impact to assets of low to high heritage significance. This would result in a major to minor adverse effect prior to mitigation. Following the implementation of an approved programme of mitigation through preservation by record or preservation in situ, a minor adverse or negligible effect to buried archaeological remains is assessed.

7.13.13 No other proposed onshore development has been identified that has the potential to give rise to cumulative negative direct effects on below ground archaeological remains that may exist within the Onshore ECC or OnSS. Similarly, no related groups of below ground archaeological assets or deposits of the same type are expected to be affected by the cumulative developments.

CUMULATIVE INDIRECT EFFECTS

ONSHORE ECC AND ONSS

7.13.14 A number of developments within 5 km of the Onshore ECC and OnSS have been considered (as per Table 7.1Table 7.10) for the assessment of indirect cumulative effects arising from the construction and operation of the Onshore ECC and OnSS. As effects arising from the Onshore ECC in the construction phase will be temporary and do not continue into the operational phase, no significant cumulative effects with other developments in the vicinity have been identified.

7.13.15 With regard to cumulative effects arising from the delivery scenarios with North Falls OWF. Delivery scenario 2 is considered to be a worst-case scenario whereby the two projects would be constructed one after the other. Whilst this would result in a continuous construction period over a greater duration than the VE project alone. This may also include the use of Bentley Road by construction traffic for the North Falls. Effects to individual assets would still be temporary as the construction of the Onshore ECC would move along the route before the second project followed behind it. As these effects would be temporary for each asset, although occurring at two separate times, no significant cumulative effects with North Falls OWF have been identified.

7.13.16 The operational VE OnSS is not considered to give rise to any significant effects when considered in combination with the surrounding cumulative schemes. The small number of minor adverse effects identified above will not be increased to a moderate or major effect to their heritage significance through the construction of the other developments. The location for the North Falls OnSS will be adjacent to the VE OnSS. Whilst there would be an increase in the change to the setting of the heritage assets which have been identified as receiving either a minor adverse or negligible effect as a result of the VE OnSS, this is not considered to constitute such a change as to cause a significant effect to the heritage significance of these assets. As the change would be permanent during the operational phase, the delivery scenarios are irrelevant and do not change to assessment of effects, with regard to the timing of the increased effects.

7.13.17 The VE OnSS will lie adjacent or close to the proposed EACN Substation resulting in two substations within the settings of the surrounding heritage assets. Whilst this would result in an increase in the change to the setting of the heritage assets which have been identified as receiving either a minor adverse or negligible effect as a result of the VE OnSS, this is not considered to constitute such a change to cause a significant effect to the heritage significance of these assets.

7.13.18 The cumulative effects of the VE OnSS in combination with both the North Falls substation and the EACN substation would result in three substations within the surroundings of the assets identified as receiving a negligible or minor adverse effect as a result of the VE OnSS alone (Volume 6, Part 7, Annex 2.2). It is also possible that the haul road installed for the VE OWF would continue to be in use during the VE operational phase to support the construction of the North Falls and EACN substations. Whilst there would be an increase in the change to the setting of the heritage assets identified as receiving minor adverse or negligible effects as a result of the VE OnSS, this is not considered to constitute such a change as to cause a significant effect to these assets.

OFFSHORE ARRAY

7.13.19 Consideration has been given to the potential for cumulative effects of VE in combination with operational, consented and planned development of a similar type, where overlapping areas of influence may lead to combined or enhanced effects on the heritage significance of specific heritage assets through development within their setting.

7.13.20 For purposes of this assessment, a review of potential cumulative development as identified in the 50 km study area for the Seascape, Landscape and Visual Impact Assessment was undertaken. East Anglia ONE North and East Anglia TWO have been consented but are not yet operational and North Falls OWF is at the planning stage. The operational arrays have been referred to in the assessment text presented in respect of assets/asset groups discussed earlier in this Chapter, where necessary, and are not otherwise separately considered.

7.13.21 The VE WTGs are to be located behind the operational Greater Gabbard and Galloper OWFs, and the southern array area will also behind the North Falls OWF (should this be consented) when viewed from the coast. Therefore, the WTGs will always be seen in the context of (and behind and at a greater distance than) the existing and planned WTGs. Only when looking out to sea from the Aldeburgh/Orford area would there be a small gap between the existing arrays and the East Anglia Two array where the VE WTGs may be visible within the gap between the two. However, the gap is unlikely to be so large that the VE WTGs would be seen in isolation, the other arrays would also be seen in this view adjacent to the VE WTGs. The VE WTGs have also been set back from the northern array area boundary, with fewer WTGs in the northern part of the array area to reduce any potential visibility from the coast.

7.13.22 It should be noted that the proposed VE WTGs will be larger (in physical dimension) than the existing WTGs but also at a greater distance from the coastline than the Great Gabbard and Galloper arrays (and North Falls should this be consented) and as such their scale will decrease with distance. Whilst the VE WTGs will form an addition to views both behind and between the operational and planned WTGs at a long distance, this is not considered to be harmful in cumulative terms. In no case are the VE WTGs considered to cause additional or cumulative harm to the specific heritage interests or value of any asset, in such a way that the heritage significance of the asset is reduced, or the ability to appreciate and understand that interest diminished.

7.14 CLIMATE CHANGE

7.14.1 The effects of climate change are expected to include warmer, drier summers, rising sea levels, storm events and temperature rise. This section assessed the following aspects:

- The effect of climate change on the local area in which the proposed development will take place; and
- The likely impacts of climate change and the project in-combination on the receiving environment.

7.14.2 The information provided in this section will be drawn upon and summarised in Volume 6, Part 4, Chapter 1: Climate Change. As outlined in of Volume 6, Part 4, Chapter 1: Climate Change, the operational phase of VE would enable the use of renewable electricity which would result in a positive impact of reduced greenhouse gas emissions from electricity generation, resulting in a significant beneficial effect.

EFFECT OF CLIMATE CHANGE ON THE LOCAL ENVIRONMENT

7.14.3 In general, effects to onshore archaeology and cultural heritage resulting from climate change could occur to potential assets on the foreshore through increased storm events and changing tidal patterns, which may lead to the exposure of previously waterlogged/buried deposits or assets, which made lead to their degradation through drying and therefore lose their archaeological interest which makes up their significance. These changes may also have an effect upstream in estuaries and rivers, where features or deposits may also become exposed.

7.14.4 Such events may also affect built heritage assets located on the coastline either through erosion of the fabric of the structures themselves, or through erosion of the cliff face/coastline which may lead to cliff falls, destroying archaeological remains/historic buildings located at the top of the cliff.

7.14.5 Warmer temperatures could lead to an increase in risk of fire which has the potential to lead to a loss of heritage significance of historic buildings, either through total loss of the asset or fire damage.

7.14.6 It is not anticipated that VE will increase the likelihood that such events will occur or increase the severity of such events. As such no significant effects to onshore archaeology and cultural heritage from the VE in combination with climate change are identified.

EFFECT OF CLIMATE CHANGE AND THE PROJECT ON THE LOCAL ENVIRONMENT

7.14.7 It is not anticipated that VE will contribute to or accelerate the erosion of the inter-tidal and foreshore zone. No surface foreshore assets have been identified as part of the baseline surveys, however there is potential for such remains to exist beneath the surface. The consideration of climate change in combination with the Proposed Development has not altered the conclusions of the Onshore Archaeology and Cultural Heritage assessment.

7.15 INTER-RELATIONSHIPS

7.15.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of VE on the same receptor, or group of receptors. Such inter-related effects include both:

- Project lifetime effects: i.e. those arising throughout more than one phase of the project (construction, operation and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation; and
- Receptor led effects: assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

7.15.2 Effects to onshore archaeology and cultural heritage are not anticipated to interact in such a way as to result in combined effects of greater significance than the assessments presented for each individual project phase.

7.16 TRANSBOUNDARY EFFECTS

7.16.1 Transboundary effects to onshore archaeological and cultural heritage assets are not anticipated.

7.17 SUMMARY OF EFFECTS

7.17.1 Table 7.12 provides a summary of all potential effects of VE upon onshore heritage assets with mitigation measures that could be employed to reduce these effects.

7.17.2 Significant effects to buried archaeological remains were identified where these are predicted to be of medium or high heritage significance, prior to mitigation. However, following the implementation of an approved programme of mitigation measures through preservation by record or preservation in situ (if appropriate), no significant residual effects are anticipated (reduced to a minor adverse effect).

7.17.3 No significant indirect effects have been identified arising from the change to setting affecting the heritage interests which make up the heritage significance of an asset. Assessment has been made of both the onshore infrastructure and the operational array and minor and negligible effects have been assessed. As these effects are not significant, no mitigation has been proposed or is considered necessary.

Table 7.12: Summary of effects for Archaeology and Cultural Heritage.

Description of effect	Effect	Additional mitigation measures	Residual impact
Construction			
Direct effect to deposits with Palaeolithic potential	High negative Magnitude Medium to High heritage significance	Preservation by Record	Minor adverse (not significant)
Direct effect to deposits with Palaeoenvironmental potential	High negative magnitude Medium heritage significance	Preservation by Record	Minor adverse (not significant)
Direct effect to potential archaeological assets identified from Aerial Photo and LiDAR analysis	High negative magnitude Low to high heritage significance	Preservation by Record	Minor adverse (not significant)
Direct effects to geophysical anomalies	High negative magnitude Low to high heritage significance	Preservation by record	Minor adverse (not significant)
Direct effects to archaeological features in OnSS area	High negative magnitude Low to medium heritage significance	Preservation by record	Minor adverse (not significant)
Direct effects to unknown archaeological remains	High negative magnitude Unknown heritage significance	Preservation by record	Unknown (likely minor adverse effect) (not significant)
Direct effect to potential historic hedgerows	No Impact Low heritage significance	None proposed	No Effect predicted

Description of effect	Effect	Additional mitigation measures	Residual impact
Indirect effect- Great Holland Mill House	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Hempstalls Farmhouse	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Abbotts Hall	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Great Holland Lodge	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Church of St Mary	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Bounds Farmhouse	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Operation			
Direct effect to potential archaeological remains	No impact	None proposed	No effect predicted
Direct effect to potential historic hedgerows	No impact	None proposed	No effect predicted
Indirect effect- Jennings Farmhouse	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)

Description of effect	Effect	Additional mitigation measures	Residual impact
Indirect effect- Bounds Farmhouse	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Indirect effect- Ash House	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Indirect effect- Church of St Mary	Low negative magnitude High heritage significance	None proposed	Minor adverse (not significant)
Indirect effect- Crop marks south of Ardleigh	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Indirect effect- Little Bromley Henge	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Indirect effect to Historic Landscape Character	Negligible magnitude Low heritage significance	None proposed	Negligible (not significant)
Indirect effect- North Lookout, Aldeburgh	Low negative magnitude High heritage significance	None proposed	Negligible (not significant)
Indirect effect- South Lookout, Aldeburgh	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Indirect effect- Martello Tower, Aldeburgh	Low negative magnitude High heritage significance	None proposed	Negligible (not significant)
Indirect effect- Orford Castle	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)

Description of effect	Effect	Additional mitigation measures	Residual impact
Indirect effect- Naze Tower, Walton	Negligible magnitude High Heritage significance	None proposed	Negligible (not significant)
Decommissioning			
Disturbance to potential archaeological assets	No impact	None proposed	No effect predicted
Direct effects to potential historic hedgerows	No impact	None proposed	No effect predicted
Indirect effect to Historic Landscape Character	No impact	None proposed	No effect predicted
Indirect effect to heritage significance through change within setting (onshore and offshore infrastructure)	No impact	None proposed	No effect predicted
Cumulative effects			
No cumulative effects reported			

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